Montana Department of ENVIRONMENTAL QUALITY

Tongue River
CBM Sampling Project 2009

MTDEQ Water Protection Bureau
by
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Introduction

The Tongue River CBM Sampling Project will provide background water quality data of the Tongue River and other drainages and tributaries in southeastern Montana which are currently associated with Coal Bed Natural Gas (CBNG) energy development. The goal of this project was to collect a minimum of twenty water quality samples in streams that are associated with CBNG development and in streams that may have future development which can be monitored for background information. The analytical parameters requested for the samples collected were targeted to provide useful water quality data to WPB staff and for future Montana Pollutant Discharge Elimination System (MPDES) permit development.

A total of twenty-three (23) water quality samples were collected within the project area including one permitted CBNG outfall near the state line that discharges into the Tongue River. The project findings are provided in this report with detailed information about the sampling project including field results, maps of the project area, GPS coordinates, lab results and graphs, field parameters, flow rates and digital photos.

Methods and Materials

Sample Collection Procedures

Samples were collected per the Code of Federal Regulations (CFR) Chapter 40 Part 136 (Guidelines Establishing Test Procedures for the Analysis of Pollutants). The list of analytes, methods, and preservatives can be found in Table 1. All laboratory analysis was conducted by the Montana Department of Public Health and Human Services Laboratory in Helena, MT.

The sample collection methods followed for the execution of this project was in accordance with USEPA document, SESDPROC-306-R1, titled “Wastewater Sampling”. The samples were collected primarily under guidance from page 19 and 20 of this document entitled “Manual Sampling” and “Special Sample Collection Procedures” for organic compounds and metals. Excerpts from these documents can be found in Appendix 1.

Field parameters were taken for each sample and recorded on a fieldsheet. Completed fieldsheets can be found in Appendix 2. Field parameters include: Flow Rate (if no USGS gauging station was located nearby), pH, Temperature, Specific Conductance and Dissolved Oxygen. Completed flow rate fieldsheets are also included for reference as Appendix 3. A list of equipment can be found in Table 2.

Sample Locations

Sample locations for this project were chosen mainly along the Tongue River in Southeastern Montana. The Tongue River was chosen due to the proximity of CBNG produced water directly discharged into it near the state line and because of current CBNG development exists within the basin in Montana and Wyoming. Sample locations were chosen along the mainstem of the Tongue River generally up and downstream of major side drainages and at the mouth of the major drainages. No sample was collected downstream of Otter Creek as planned as no access to the Tongue River could be located. The sample locations and descriptions can be found in Table 3.

The major drainages along the Tongue River with sample locations are: Hanging Woman Creek, Otter Creek, Pumpkin Creek, Squirrel Creek and Deer Creek. Rosebud Creek, which does not flow into the Tongue River, was also chosen for background data and comparison to non-CBNG tributaries within the same geographic area of Montana. A sample was also collected on the Powder River at the state line. Maps of the sample locations can be seen in Appendix 4.

As noted earlier, most sample locations were chosen along the mainstem of the Tongue River upstream, downstream, and at the mouth of major tributaries. This type of sampling procedure can determine the chemical influence each tributary has on the Tongue River and is useful in seeing water chemistry trends from upstream to the downstream reaches. The other sample locations along the major tributaries can indicate the type of water chemistry changes that occur along the reaches from the headwaters to the mouths of these drainages.

Summary

Sampling

The sampling project was planned to begin in late March, 2009 but inclement weather and scheduling conflicts postponed the field work to the week of May 11th. According to the Community Collaborative Rain, Hail & Snow Network (CoCoRaHS), the Rosebud County Station (MT-RB-2) and Sheridan County Wyoming (WY-SH-18) station located within the project area recorded the following precipitation amounts (inches) for March, April and May:

	Rosebud County MT-RB-2	Sheridan County WY-SH-18
March Total	2.24	2.73
April Total	1.19	1.21
May Total	1.77	0.44

A total of twenty-five (25) sample sites along the Tongue River and the Powder River were chosen to be investigated. Of these, twenty three (23) sites were actually sampled. Two sites were not sampled as the upstream location on Pumpkin Creek (PC002) had no flow, and there was no access to the Tongue River sample downstream of Otter Creek (TR007). Water quality and quantity data was collected at all of these sites. United States Geologic Survey (USGS) stream gages along the Tongue River were utilized to determine flow rates of the Tongue River at the time of sampling. Flow rates were measured manually on the side tributaries where there was no USGS gage.

Geographic Data Trends

Water quality of the Tongue River tends to be of similar quality from Wyoming until it reaches the Montana state line. From the state line to the Tongue River Reservoir the water quality slightly decreases as indicated by a slight increase of Sodium Adsorption Ratio (SAR) (Figure1), Specific Conductance, Hardness, Bicarbonate, and Sulfate (Figure 2). Specific Conductance of the Tongue River and tributaries can be seen in (Figure 3). As the water flows from the state line and enters the Tongue River Reservoir, Specific Conductance

increase. This data trend is similar to the data trend of a Specific Conductance study done by the USGS in 2005 (Lambing 2005). After the water exits the reservoir, water quality within the Tongue River stays relatively constant. SAR does increase with stream distance as the dissolved sodium concentration also increases with stream distance (Figure 1). The data shows that Hanging Woman Creek has a slight influence on the Sodium concentration within the Tongue River. The upstream sodium concentration of the Tongue River from Hanging Woman Creek is 44.3 mg/L and the downstream concentration is 45.8 (Figure 1). The total metals concentrations of the Tongue River tend to follow the amount of Total Suspended Solids as expected and concentrations increase with stream distance (Figures 4 & 5).

Hanging Woman Creek water quality generally increases from the Montana/Wyoming state line to the mouth (Figures 6 - 9). SAR decreases from the state line to the mouth (Figure 6). Total Suspended Solids (TSS) (Figures 7 & 8) and Total Dissolved Solids (TDS) (Figure 9) decrease from the headwaters to the mouth along with most of the Total and Dissolved constituents analyzed in the study.

Water quality of Otter Creek remains relatively constant between the sampling locations (Figures 10-13). Lab data for all sample locations can be found in (Appendix 5).

Water quality samples were collected at single points on Squirrel Creek, Deer Creek, Rosebud Creek, Pumpkin Creek, and the Powder River. Analysis for those locations can be found in (Appendix 5).

Conclusion

The data collected for this study will be helpful for future MPDES permitting when writing permits to protect ambient water quality for waters of the state in this area. Data collected also provides water quality stream data in the area that can be compared to existing and future data collected on the Tongue River to monitor water quality changes with time. If funding were available, this study could be expanded to include monitoring more frequently throughout the year which would give insight of seasonal fluctuations of water quality. Since this sampling event took place in the spring of the year, spring runoff water quality has the potential to be of better quality than would be found in natural summer flows and water quality may be different during the irrigation season. Utilizing all the data collected on the Tongue River by different government agencies and entities provides valuable information to all water users within the Tongue River basin.

Acknowledgements

The Montana Department of Environmental Quality - Water Protection Bureau (DEQ-WPB), would like to thank the Bureau of Land Management (BLM) and the Montana Bureau of Mines and Geology (MBMG) for their input and assistance during the planning stages of this sampling project.

References

Lambing, John: "Reconnaissance Survey of Specific Conductance along the Tongue River between the Streamflow-Gaging Stations at Monarch, Wyoming, and State Line, Montana, September 27-28, 2005." Internet: <http://mt.water.usgs.gov/projects/tongueriver/SC_Synoptic_2005.html>.

CoCoRaHS : Community Collaborative Rain, Hail & Snow Network. Internet : <http://www.cocorahs.org>

Tongue River CBM Sampling Project 2009

Figures

Figure 1

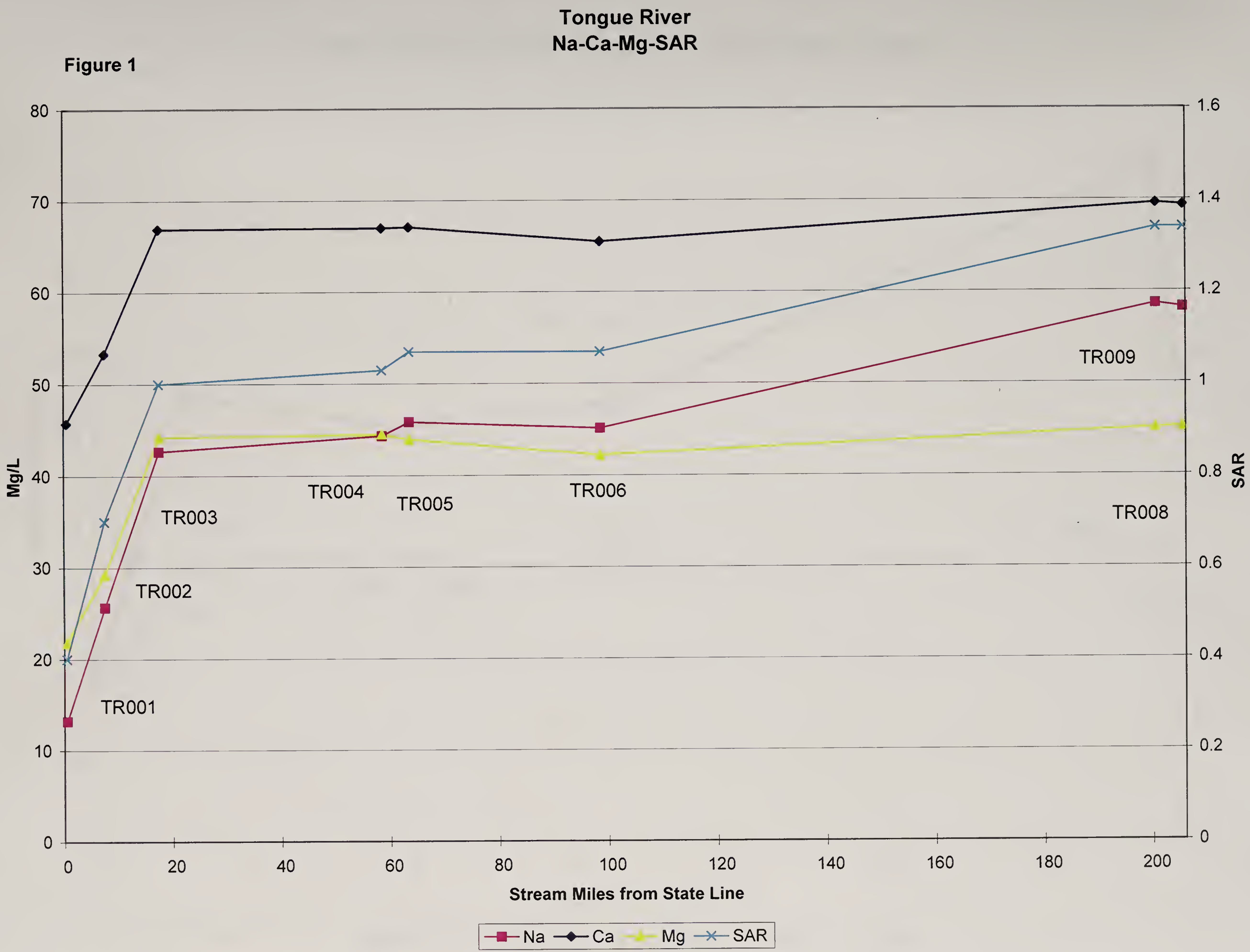

Tongue River
Na-Ca-Mg-SAR
Mg/L
80
70
60
50
40
30
20
10
0
SAR
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0
20
40
60
80
100
120
140
160
180
200
Stream Miles from State Line
TR001
TR002
TR003
TR004
TR005
TR006
TR008
TR009
Na
Ca
Mg
SAR

Figure 2

Tongue River
TDS - Hardness - Specific Conductance - Bicarbonate - Sulfate

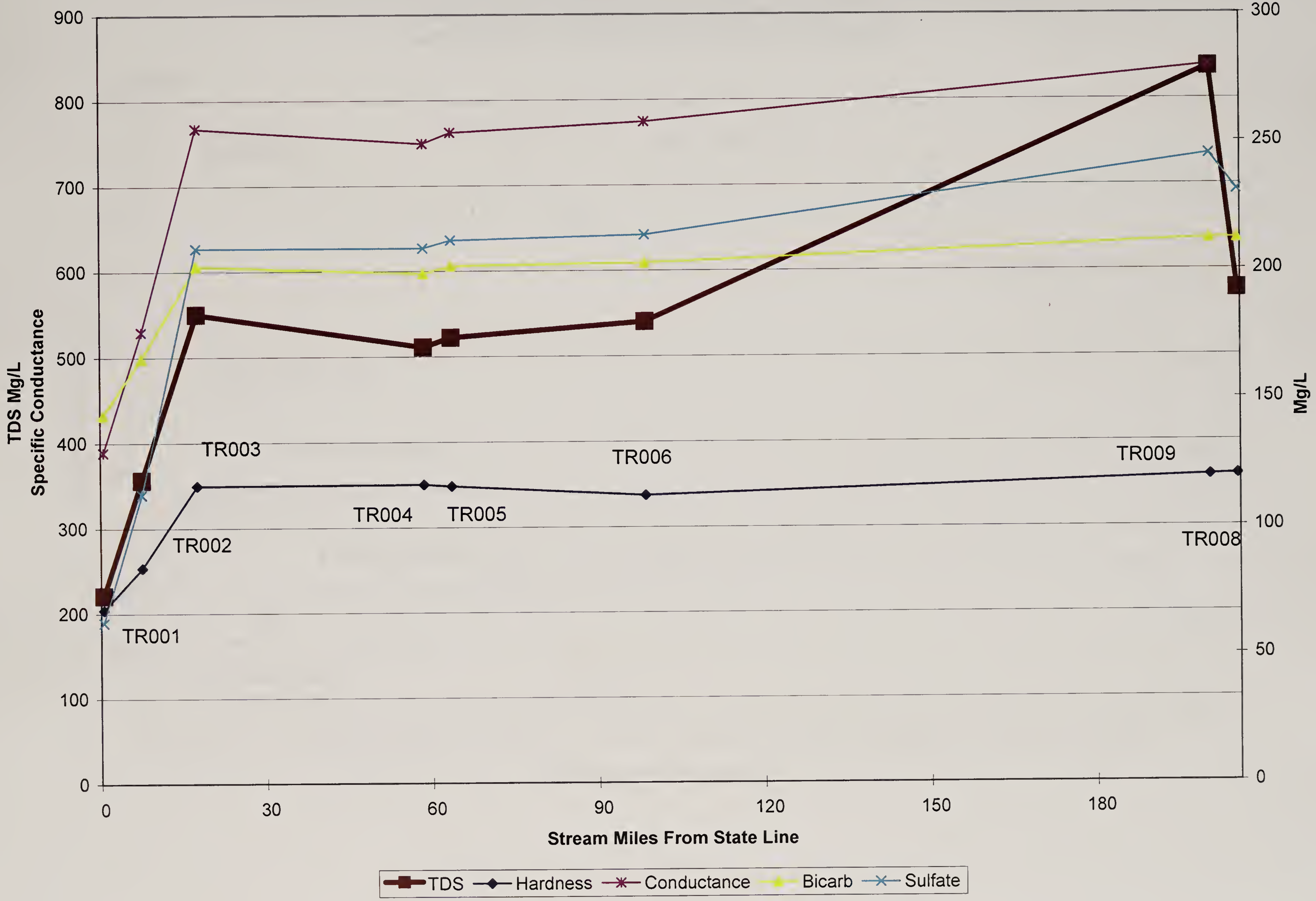
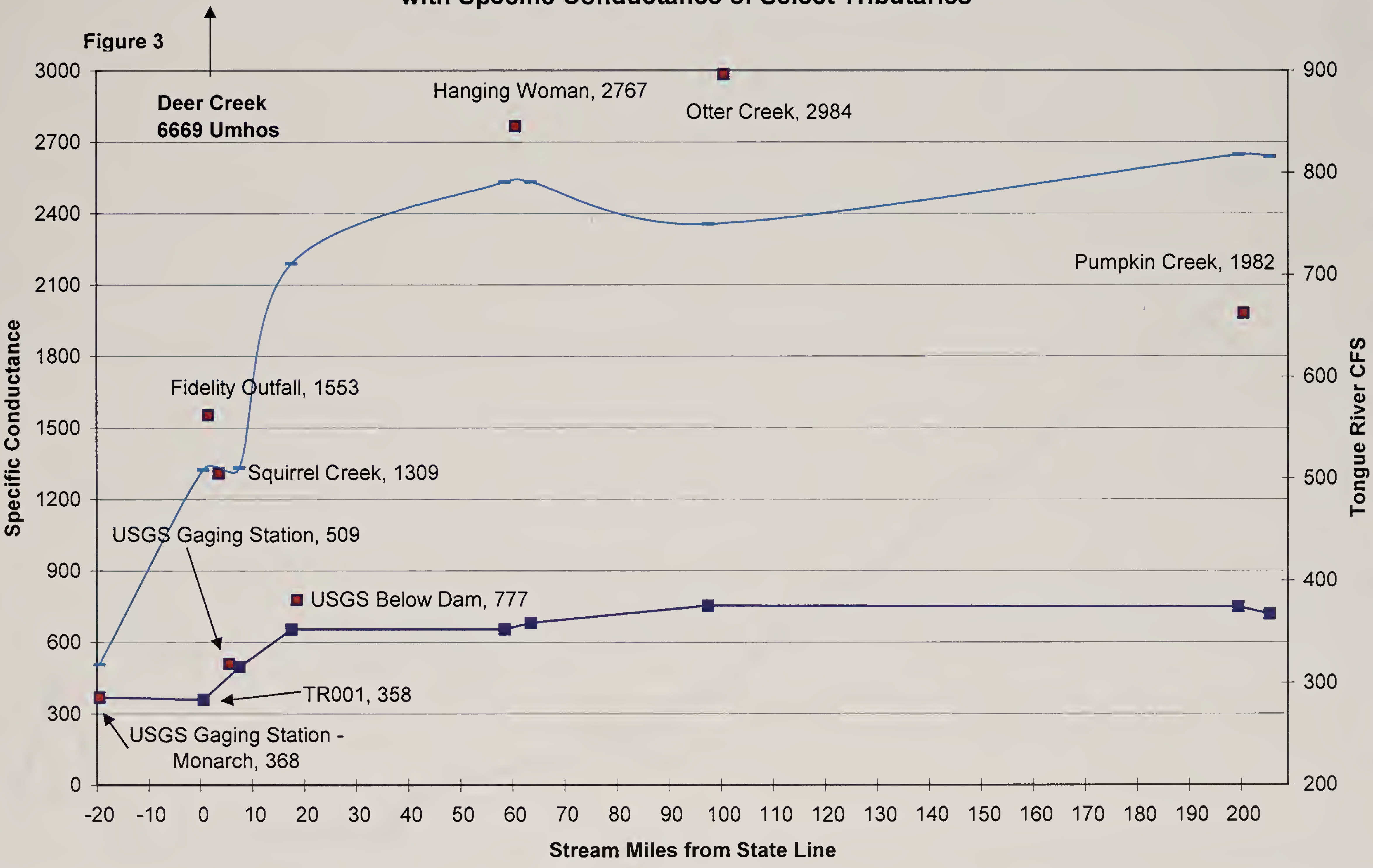


Figure 3



Tongue River Specific Conductance and Flow with Specific Conductance of Select Tributaries

Figure 4

Tongue River
TSS - Total Cu - Total Zn

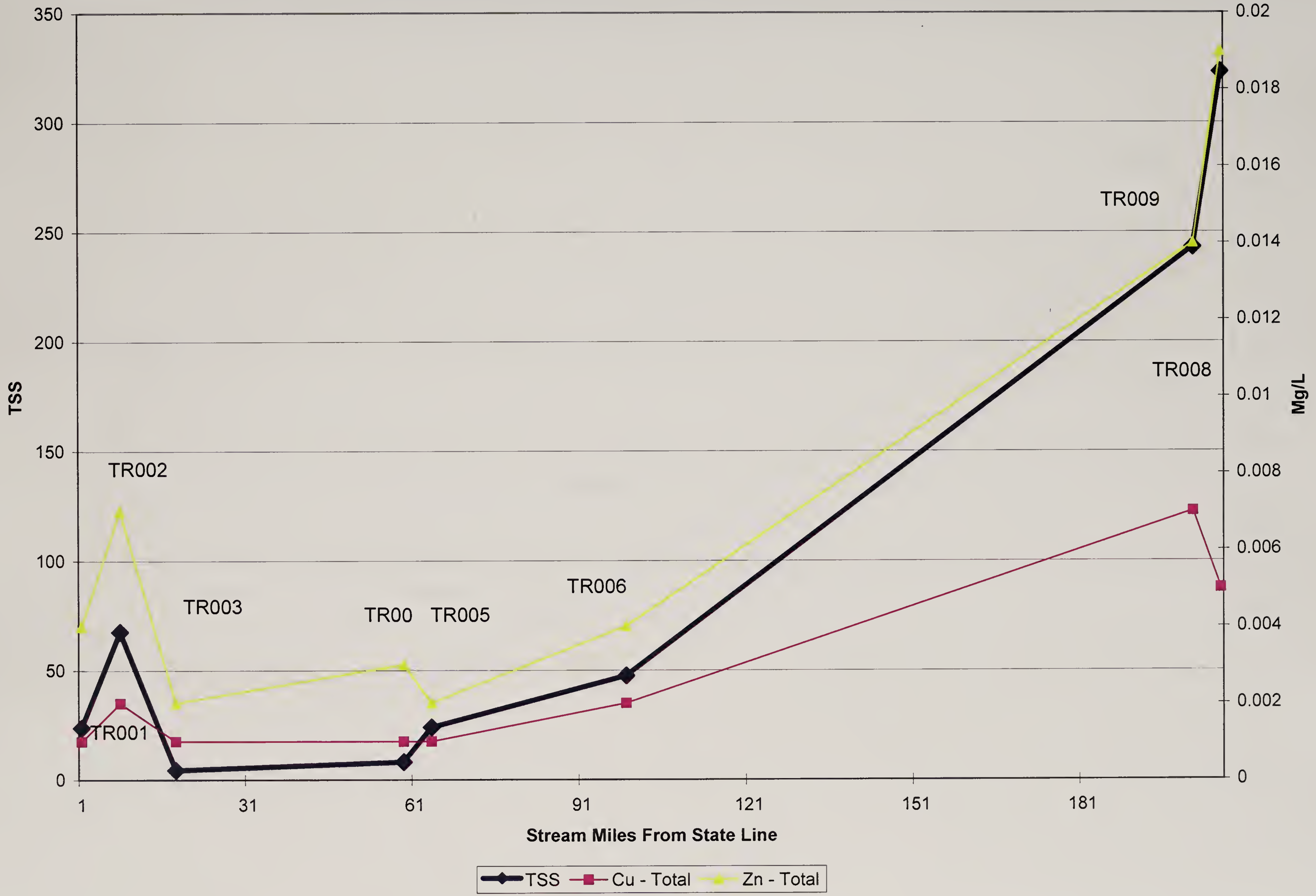


Figure 5

Tongue River
TSS - P - Mn

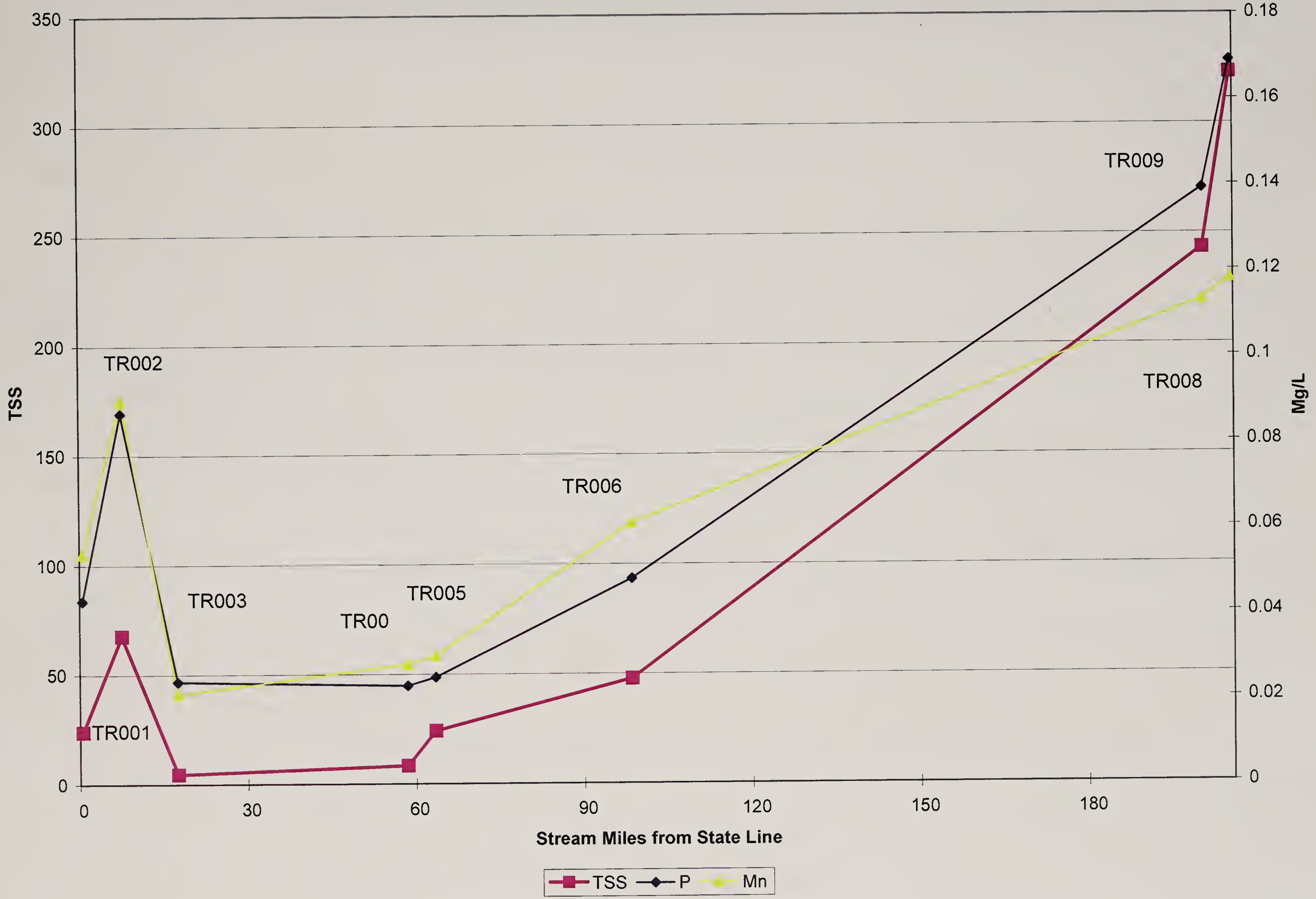


Figure 6

Hanging Woman Creek
Na-Ca-Mg-SAR

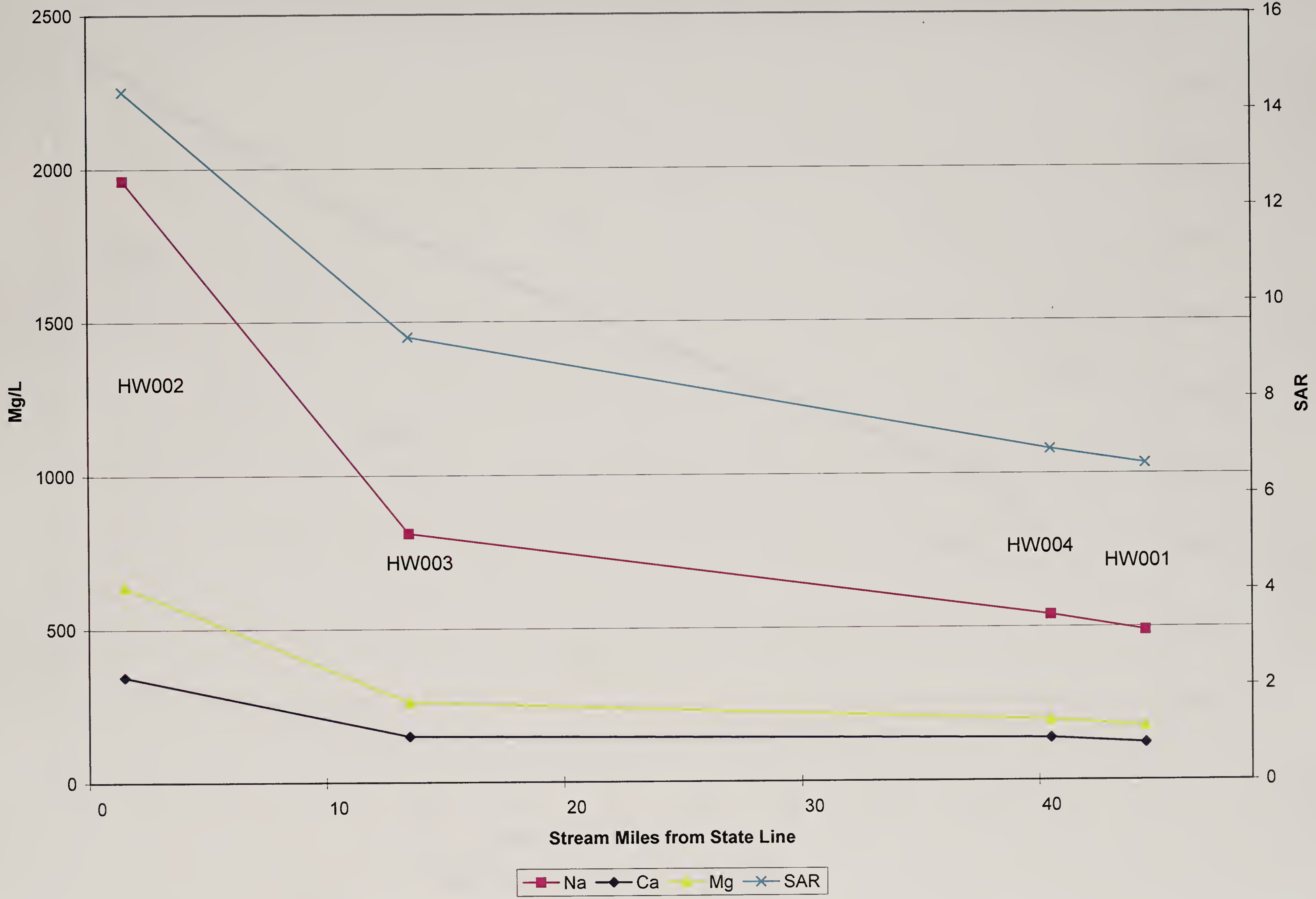


Figure 7

Hanging Woman Creek
TSS - Total Cu - Total Zn

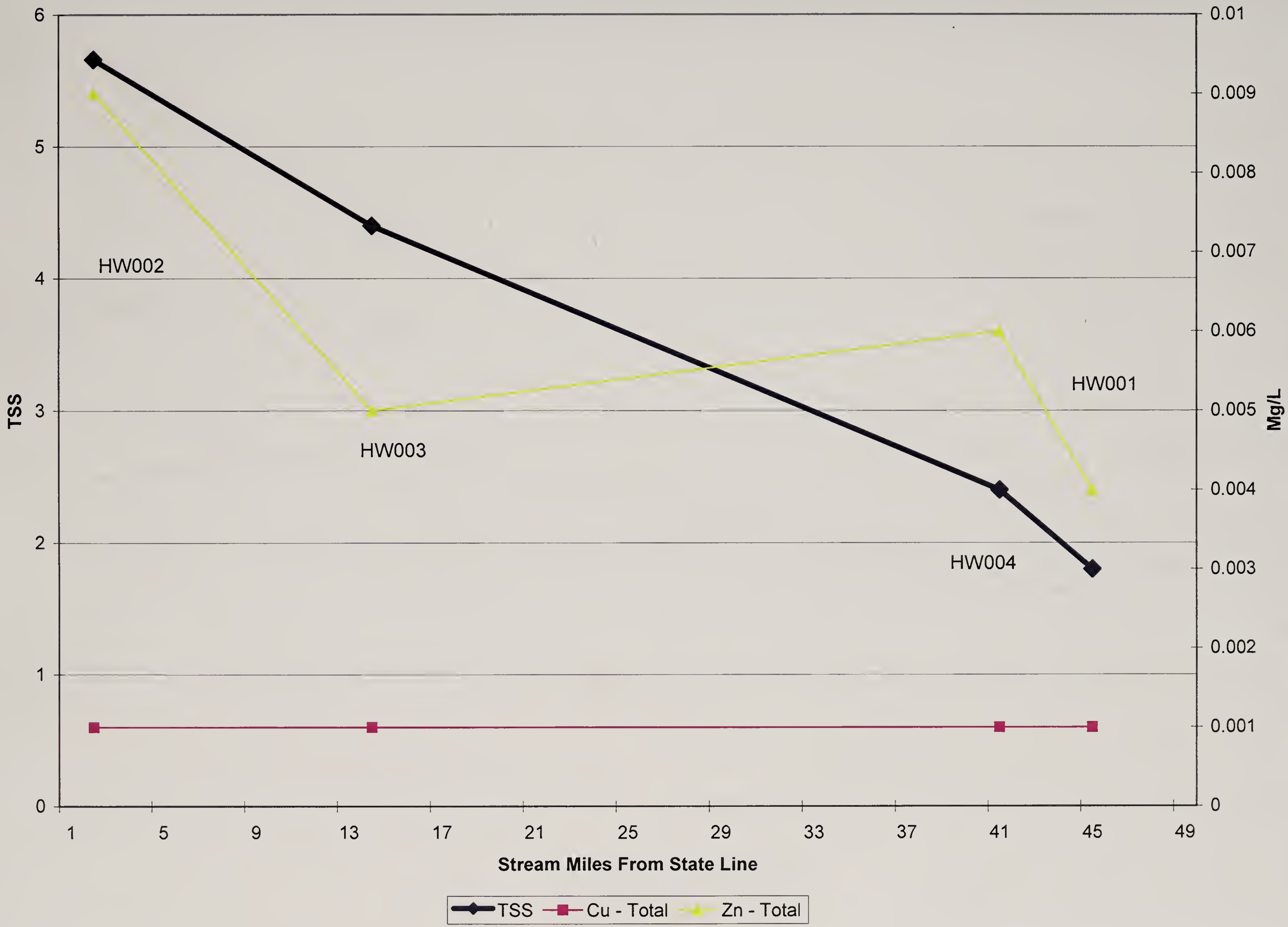
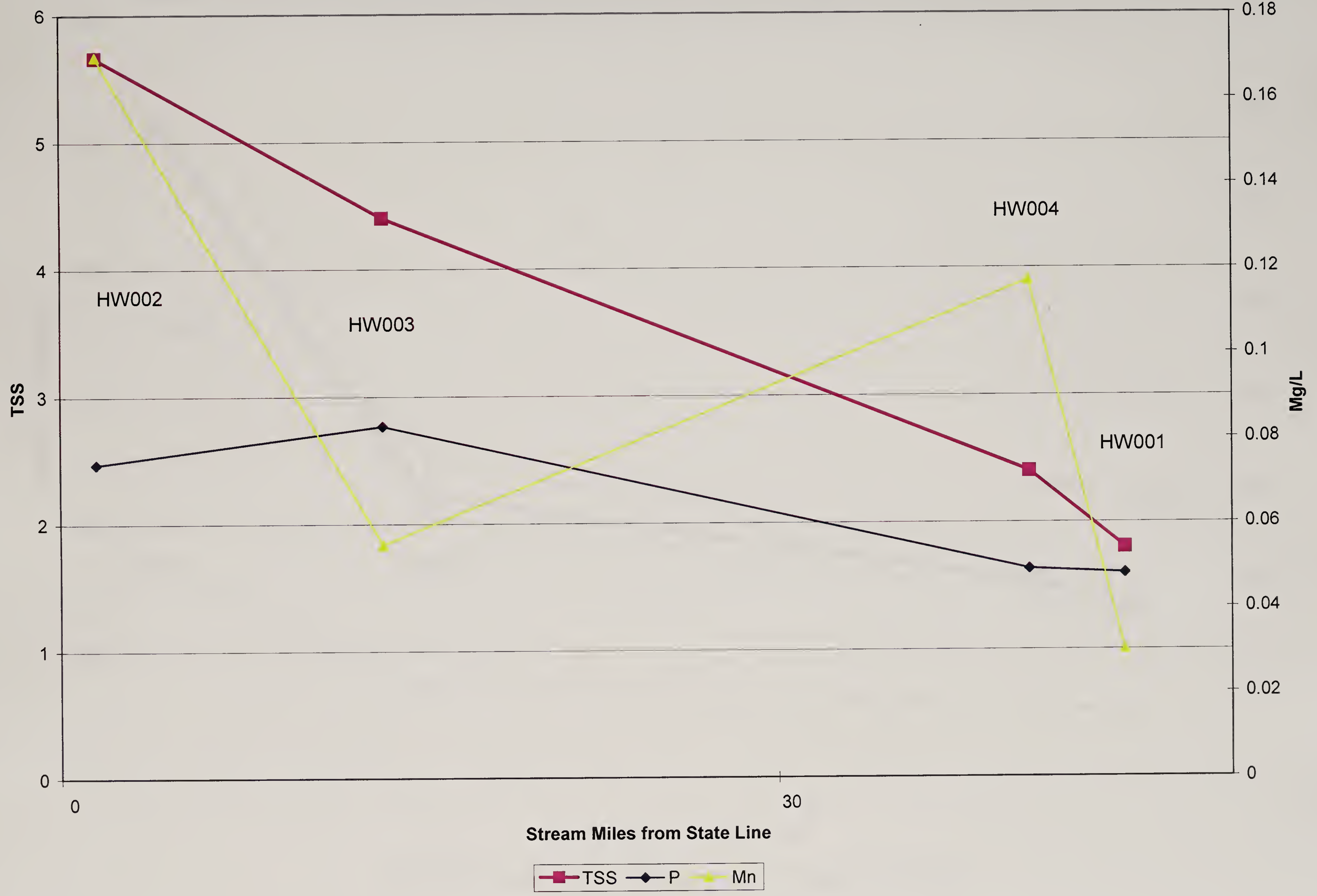


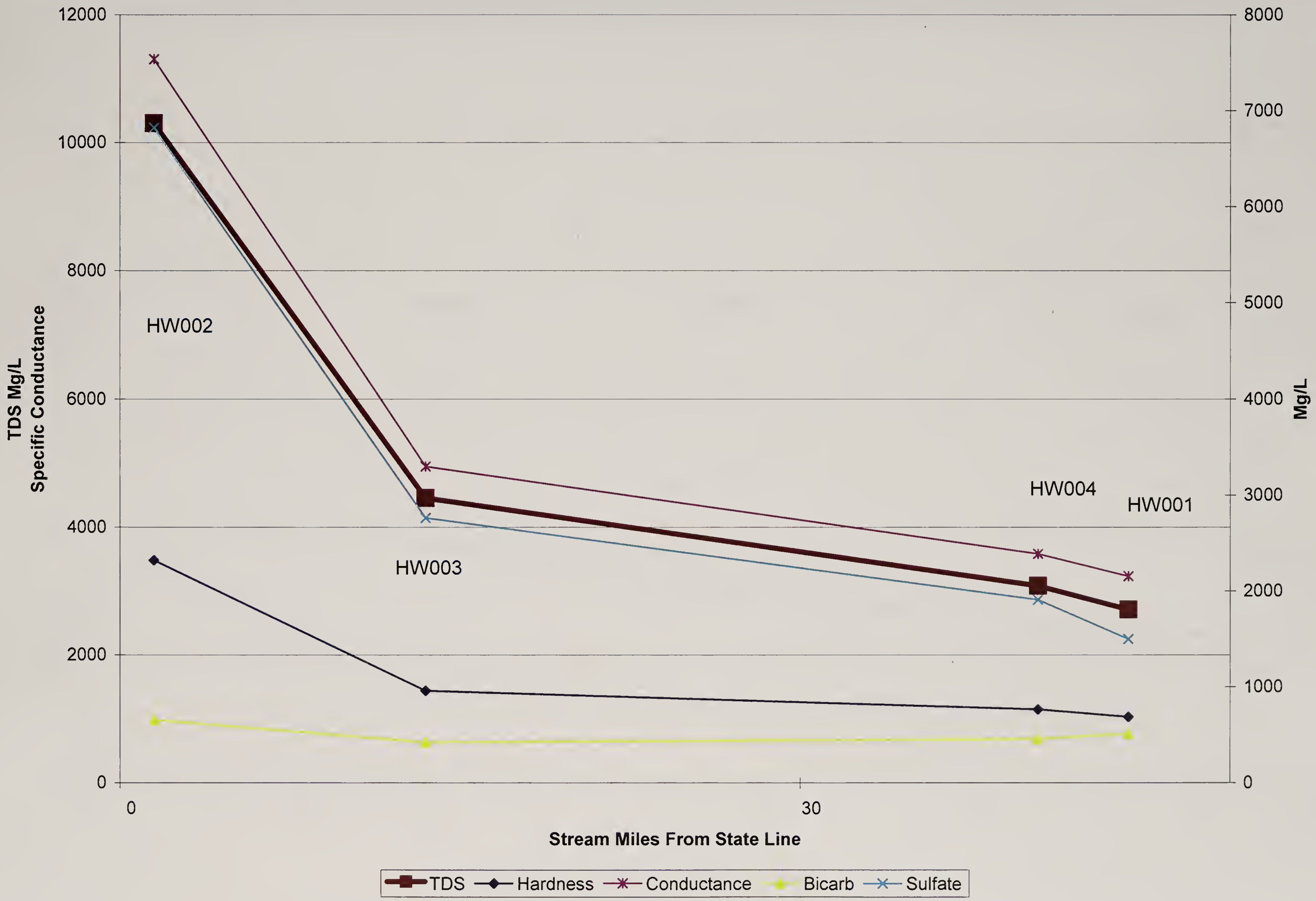
Figure 8

Hanging Woman Creek
TSS - P - Mn



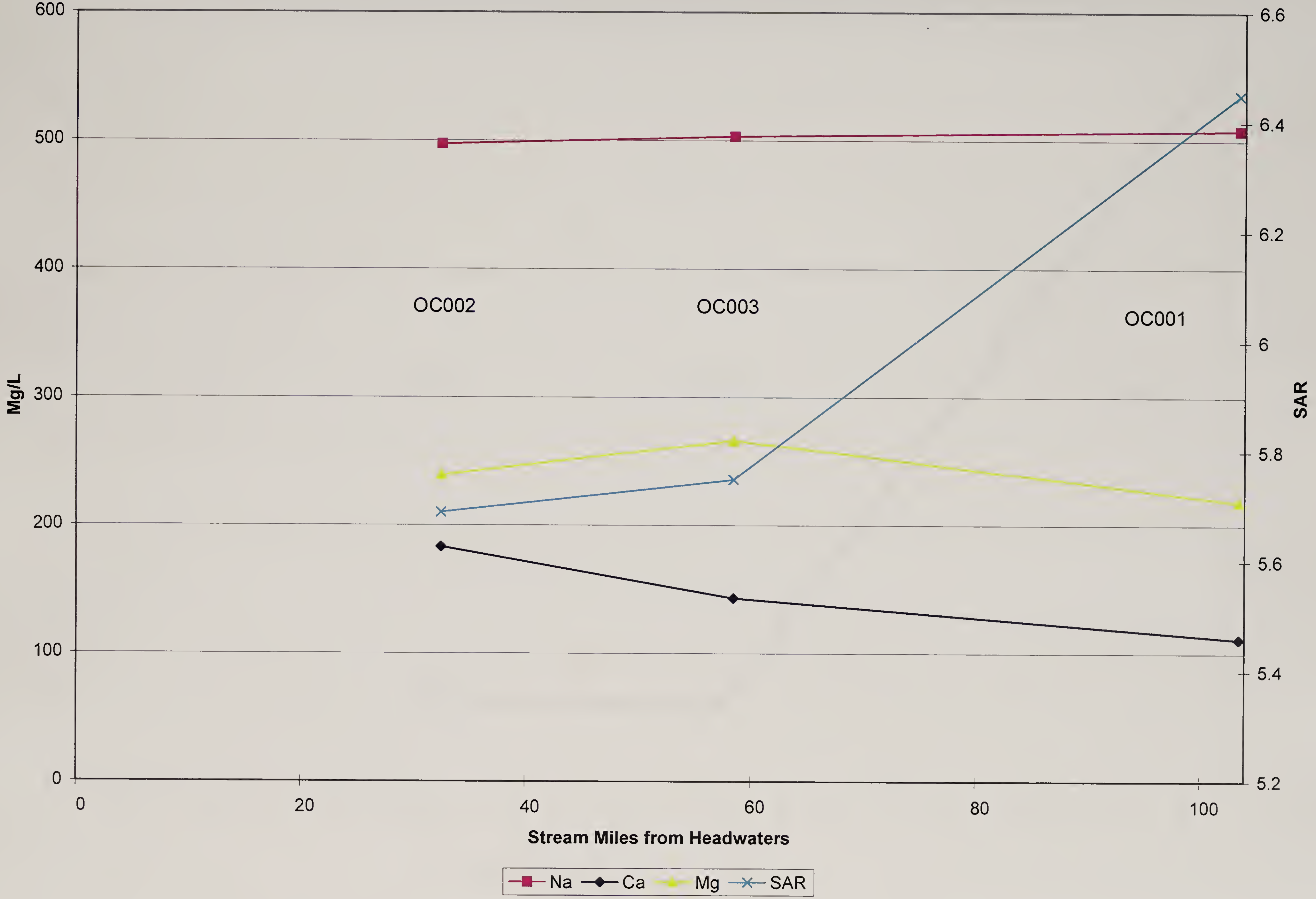
Hanging Woman Creek
TDS - Hardness - Specific Conductance - Bicarbonate - Sulfate

Figure 9



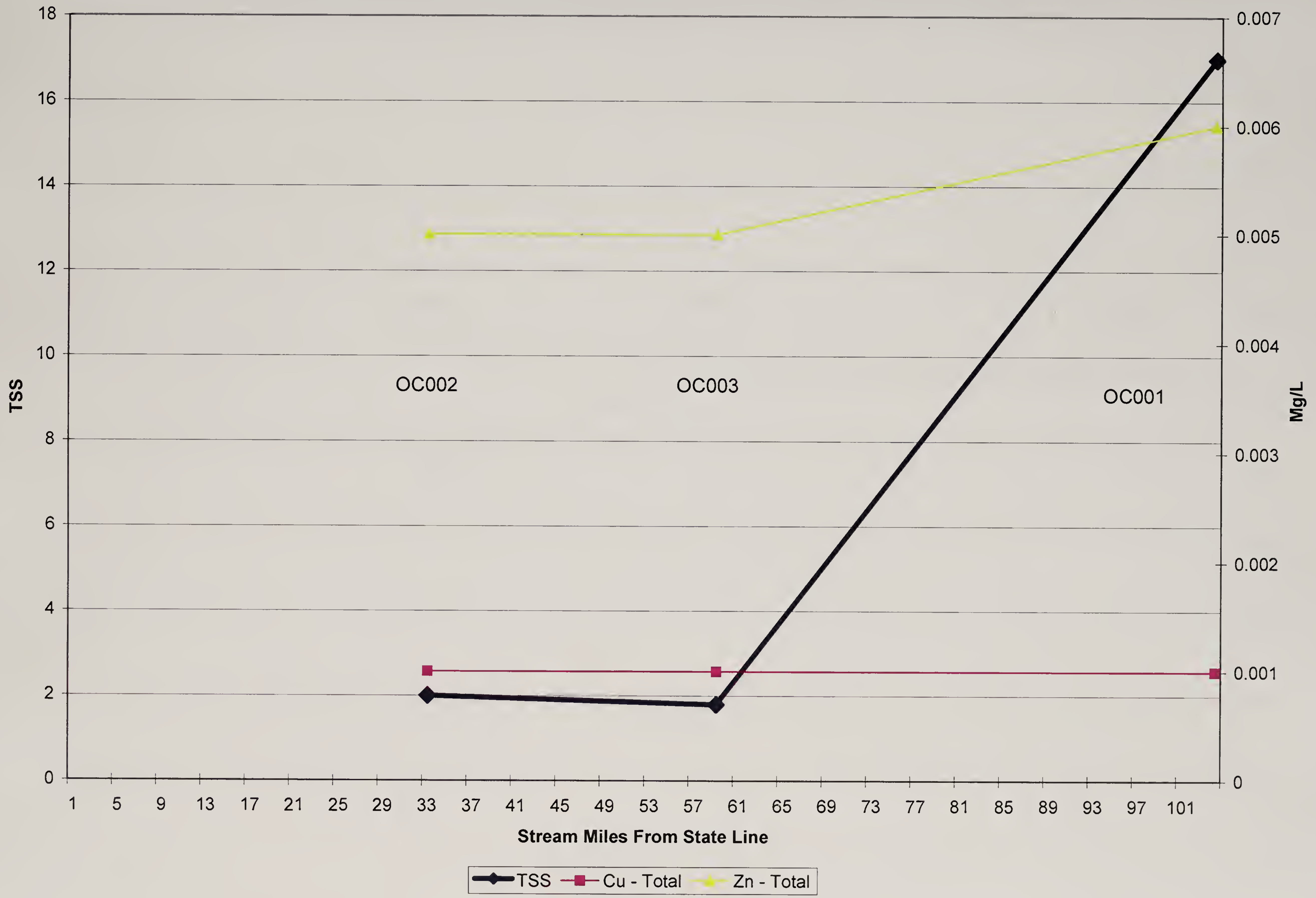
Otter Creek
Na-Ca-Mg-SAR

Figure 10



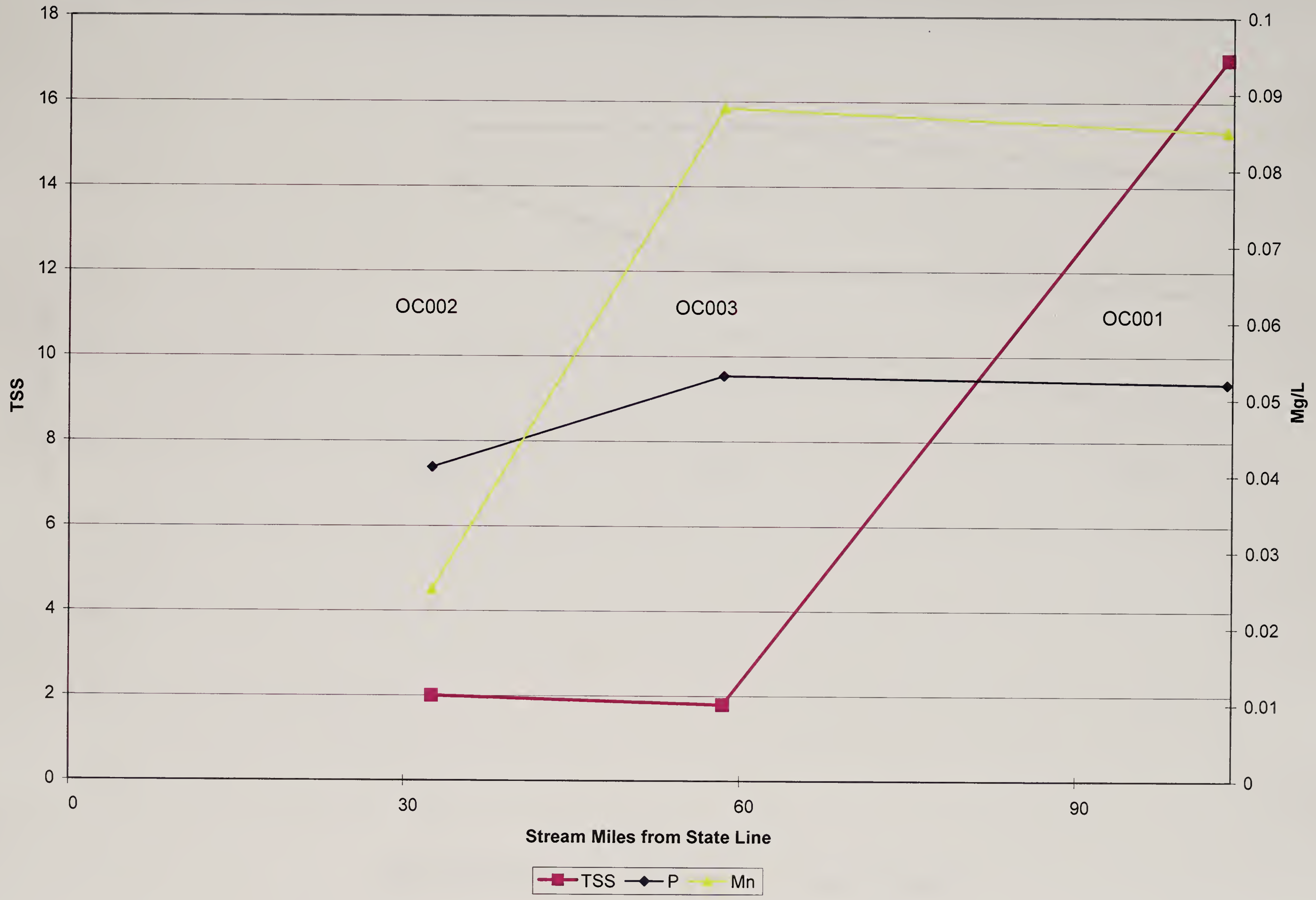
Otter Creek
TSS - Total Cu - Total Zn

Figure 11



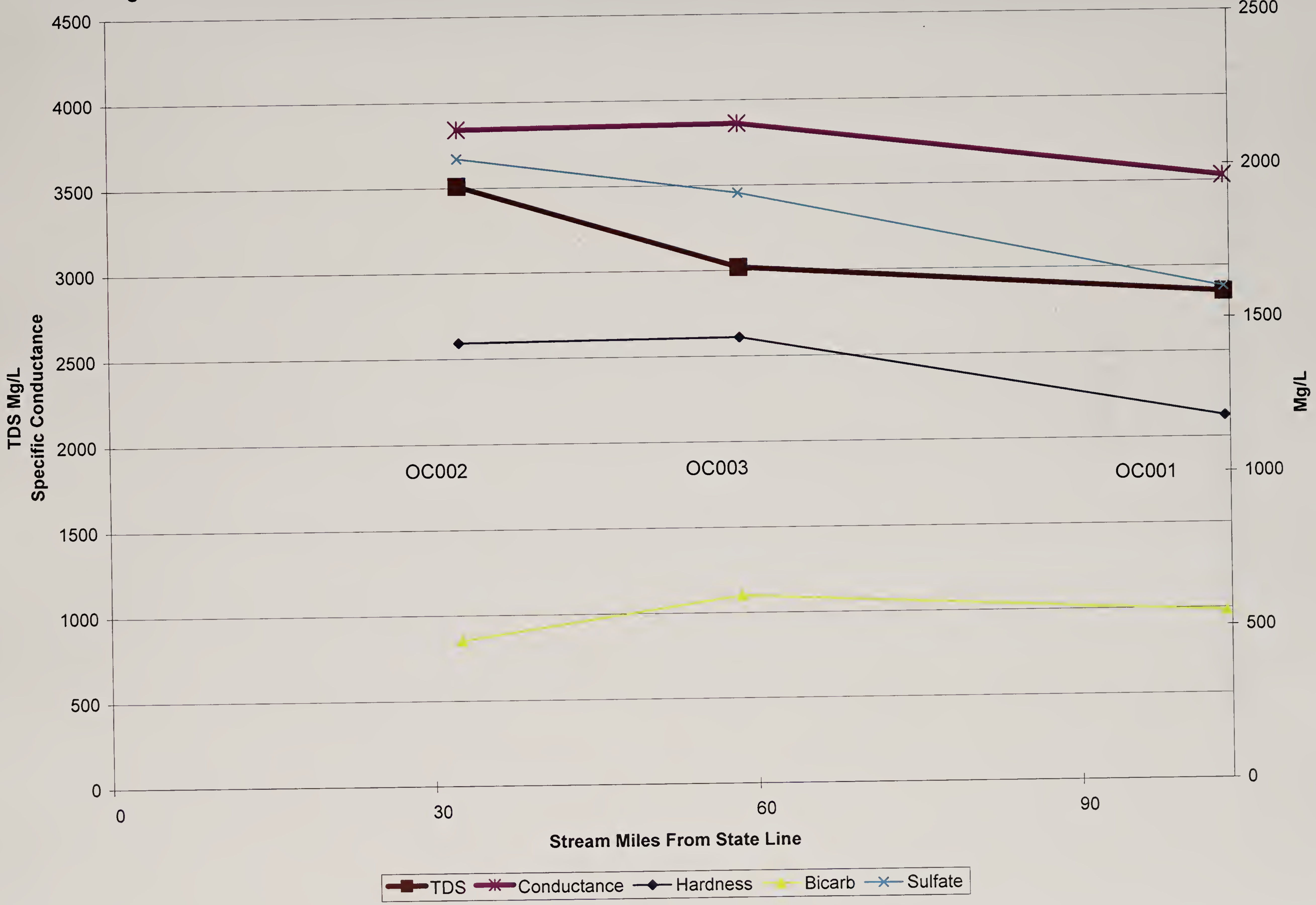
Otter Creek
TSS - P - Mn

Figure 12



Otter Creek
TDS - Hardness - Specific Conductance - Bicarbonate - Sulfate

Figure 13



Tongue River CBM Sampling Project 2009

Tables

Tongue River CBM Sampling Project

List of Analytes

Table 1

Major Ions and Non-Metals	**Method**	**Preservative**
pH	Field	n/a
Chloride, Dissolved	E300.0	Raw
Sulfate, Dissolved	E300.0	Raw
Cation Milliequivalent	APHA* 1050 A	Raw
Anion Millievquivalent	APHA 1050 A	Raw
Manganese, Dissolved	E200.7	Raw
Potassium, Dissolved	E200.7	Raw
Calcium, Dissolved	E200.7	Raw
Magnesium, Dissolved	E200.7	Raw
Sodium, Dissolved	E200.7	Raw
Sodium Adsorption Ratio, (SAR), Calculated	E200.7	Raw
Total Hardness as CaCO3	E200.7	Raw
Suspended Solids,Total (TSS) at 105 deg. C	APHA 2540 D	Raw
Total Solids, Dissolved (TDS) at 180 deg. C	APHA 2540 C	Raw
Alkalinity, Total as $CaCO_3$	APHA 2320 B	Raw
Carbonate, Dissolved	APHA 2320 B	Raw
Bicarbonate, Dissolved as CaCO3	APHA 2320 B	Raw
Specific Conductance	APHA 2510 B	Raw
Nitrogen, Total	E353.2	Sulfuric Acid
Nitrate	E353.2	Sulfuric Acid
Nitrite	E353.2	Sulfuric Acid
Flouride, Dissolved	E300.0	Raw
Phosphorus, Total	E365.1	Sulfuric Acid
Metals analysis		
Aluminum, Dissolved	E200.7	Nitric Acid
Aluminum, Total Recoverable	E200.7	Nitric Acid
Arsenic,Total Recoverable	E200.7	Nitric Acid
Arsenic, Dissolved	E200.7	Nitric Acid
Barium, Total Recoverable	E200.7	Nitric Acid
Beryllium, Total Recoverable	E200.7	Nitric Acid
Cadmium, Dissolved	E200.7	Nitric Acid
Cadmium, Total Recoverable	E200.7	Nitric Acid
Chromium, Total Recoverable	E200.7	Nitric Acid
Copper, Dissolved	E200.7	Nitric Acid
Copper, Total Recoverable	E200.7	Nitric Acid
Iron, Dissolved	E200.7	Nitric Acid
Iron, Total Recoverable	E200.7	Nitric Acid
Lead, Dissolved	E200.7	Nitric Acid
Lead, Total Recoverable	E200.7	Nitric Acid
Nickel, Dissolved	E200.7	Nitric Acid
Nickel, Total Recoverable	E200.7	Nitric Acid
Selenium, Total Recoverable	E200.7	Nitric Acid
Uranium, Total Recoverable	E200.7	Nitric Acid
Zinc, Dissolved	E200.7	Nitric Acid
Zinc, Total Recoverable	E200.7	Nitric Acid

*APHA - Standard Methods for the Examination of Water and Wastes

Tongue River CBM Sampling Project
Table 2
Field Equipment

Type	Use
YSI 650 MDS	Dissolved Oxygen, Specific Conductance, Temperature, pH
Garman GPS Map 76	GPS Coordinates
Cannon SX100 IS	Digital Photos
Marsh~McBirney 2000	Flow Measurement

Tongue River CBM Sampling Project

Sample Locations and Field Data

Table 3

Sample ID	Location	Stream	LAT_NAD83	LONG_NAD83	Date	Time	Field Specific Conductance	Field pH	Flow_CFS
TR001	Tongue River upstream of Prairie Dog Creek at state line above Fidelity outfalls.	Tongue River	44.99605	-106.99041	5/12	0730	358	8.62	509
TR002	Tongue river downstream of Prairie Dog Creek at county road bridge.	Tongue River	45.03018	-106.81380	5/12	0930	495	8.57	511
SC002	Squirrel Creek at Decker Bridge Crossing HWY 314	Squirrel Creek	45.01258	-106.86173	5/12	0845	1309	8	4.225
RC001	Rosebud Creek at Rosebud Battle Field State Park	Rosebud Creek	45.21679	-106.98962	5/11	1700	822	8.13	7.3
TR003	Campround below TR dam.	Tongue River	45.13836	-106.76616	5/13	1030	654	8.51	711
DC001	Deer Creek at County Road 26	Deer Creek	45.05537	-106.70294	5/12	1005	6669	8.11	0.0315
HW002	Hanging Woman Creek at County Road 43A near state line	Hanging Woman Creek	45.00109	-106.42497	5/12	1200	8977	8.19	0.048
HW003	Hanging Woman Creek at intersection of County Road 20 and 43A	Hanging Woman Creek	45.13398	-106.48370	5/12	1300	4435	8.44	0.831
HW004	Hanging Woman Creek at intersection of Hanging Woman Creek Road and Lee Creek Road	Hanging Woman Creek	45.25868	-106.48971	5/12	1405	3227	8.38	0.922
EFHW001	East Fork Hanging Woman Creek at the weir gauging station.	East Fork Hanging Woman Creek	45.29083	106.40414	5/12	1600	1213	8.23	0.12
HW001	Hanging Woman Creek at USGS station	Hanging Woman Creek	45.29537	-106.50358	5/12	1500	2767	8.25	2.6
TR004	Tongue River upstream of Hanging Woman Creek.	Tongue River	45.31153	-106.52414	5/12	1725	654	8.57	791

Sample ID	Location	Stream	LAT_NAD83	LONG_NAD83	Date	Time	Field Specific Conductance	Field pH	Flow_CFS
TR005	Tongue River downstream of Hanging Woman Creek.	Tongue River	45.33870	-106.52528	5/12	1700	681	8.55	791
OC001	Otter Creek near mouth at USGS Station	Otter Creek	45.59923	-106.27097	5/13	1600	2984	8.5	9.7
TR006	Tongue River Upstream Otter Creek at HWY 212 Bridge in Ashton	Tongue River	45.59325	-106.28683	5/13	1530	753	8.56	750
OC002	Otter Creek halfway between Tooley Creek Junction and Forest Service Road FR791	Otter Creek	45.24924	-106.16207	5/13	1245	3274	8.34	~1.0
OC003	Otter Creek at 15 Mile Road Crossing	Otter Creek	45.39137	-106.14406	5/13	1330	3323	8.23	2.2
TR009	Tongue River Upstream of Pumpkin Creek	Tongue River	46.24966	-105.75237	5/14	0830	748	8.58	818
PC001	Pumpkin Creek at road crossing near mouth.	Pumpkin Creek	46.24712	-105.74789	5/14	0800	1982	8.75	8.5
TR008	Tongue River Downstream of Pumpkin Creek but upstream of TY irrigation diversion	Tongue River	46.33754	-105.80577	5/14	1000	717	8.58	816
PC002	Pumpkin Creek at Highway 212 Crossing	Pumpkin Creek	45.53910	-105.81792	5/13	1500	0	0	0
PR001	Powder River at MT/WY State line - Possibly Moorhead Campground.	Powder River	45.05753	-105.87822	5/11	1315	1109	8.1	893
MT0030457-008	Fidelity outfall	Tongue River	44.99861	-106.88065	5/12	0810	1553	8.09	0.12

Tongue River CBM Sampling Project 2009

Appendices

Appendix 1

Sampling Procedures from United States Environmental Protection Agency document, "Waste Water Sampling."

Manual Sampling

Manual sampling is normally used for collecting grab samples and/or for immediate in-situ field analyses. However, it can also be used in lieu of automatic equipment over extended periods of time for composite sampling, especially when it is necessary to evaluate unusual waste stream conditions.

The best method to manually collect a sample is to use the actual sample container which will be used to transport the sample to the laboratory. This eliminates the possibility of contaminating the sample with intermediate collection containers. If the water or wastewater stream cannot be physically reached by the sampling personnel or it is not safe to reach for the sample, an intermediate collection container may be used, from which the sample can be redistributed to other containers. If this is done, however, the container used to collect the sample must be properly cleaned according to the SESD Operating Procedure for Field Equipment Cleaning and Decontamination (SESDPROC-205) and must be made of a material that meets the requirements of the parameter(s) being investigated. Samples for oil and grease, bacteria, and most volatile compounds (both organic and inorganic; see Section 7.4 for specific requirements) must always be collected directly into the sample container.

In some cases it may be best to use a pump, either power or hand operated, to withdraw a sample from the water or wastewater stream. If a pump is used, it is imperative that all components of the pump that come in contact with the sample are properly cleaned according to the SESD Operating Procedure for Field Equipment Cleaning and Decontamination (SESDPROC-205) to ensure the integrity of the sample.

In general, samples are manually collected by first selecting a location in the waste stream that is well mixed then dipping the container in the water or wastewater stream so the mouth of the container faces upstream. The container should not be overfilled if preservatives are present in the container.

Special Sample Collection Procedures

7.1 Organic Compounds and Metals

Trace organic compounds and metals detection limits are usually in the parts per billion or parts per trillion ranges, so extreme care must be exercised to ensure sample integrity. All containers, composite bottles, tubing, etc, used for sample collection for trace organic compounds and metals analyses should be prepared as described in the SESD Standard Operating Procedure for Field Equipment Cleaning and Decontamination at the FEC (SESDPROC-206). When possible, the sample should be collected directly into the appropriate sample container. If the material to be sampled cannot be physically reached, an intermediate collection device may be used. This should be a Teflon7, glass, or stainless steel (for non-metals only) vessel on a pole or rope, or Teflon7 tubing via a peristaltic type pump and a Teflon7 vacuum container attachment which converts a sample container into a vacuum container. The device which is used should be cleaned as described in the SESD Operating Procedure for Field Equipment Cleaning and Decontamination (SESDPROC-205).

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date: 5/14/2009

Time: 0800

Sample ID #: PC001

Sample location, name of river or creek: Pumpkin Creek @ bridge x-ing near mouth, Hwy 332.

County: Custer

Legal Location:

Latitude	*Longitude*
46.24712	105.74789

Field Parameters	
Temp, C	8.39
Cond	1982
DO %	28.6
DO Mg/L	3.34
pH	8.75
NTU	
Velocity fps	
Flowrate cfs	8.5

Comments:

General weather conditions: Partly cloudy - calm.

Photos

5/14/09
0800
PC001
Upstream
Lat
46.24712
Long
105.74789

5/14/09
0800
PC001
Downstream
Lat
46.24712
Long
105.74789

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/13/2009	*Time:*	1500

Sample ID #: PC002

Sample location, name of river or creek: Pumpkin creek @ Hwy 212 x-ing.

County: Powder River	*Latitude*	*Longitude*
Legal Location:	45.53910	105.81792

Field Parameters	
Temp, C	
Cond	
DO %	
DO Mg/L	
pH	
NTU	
Velocity fps	
Flowrate cfs	

Comments:

Dry Creek, no flow.

General weather conditions: Overcast - strong winds.

Photos

5/13/09
1500
PC002
- Dry -
Lat
Long
45.53910
105.81792

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/11/2009	*Time:*	1315

Sample ID #: PR001

Sample location, name of river or creek: Powder River @ Moorehead campground

County: Powder River	*Latitude*	*Longitude*
Legal Location:	45.05753	105.87822

Field Parameters	
Temp, C	18
Cond	1109
DO %	69.6
DO Mg/L	5.62
pH	8.1
NTU	(+)1000
Velocity fps	
Flowrate cfs	893

Comments:

Batteries low in YSI meter. Installed new batteries and collected YSI parameters later at 1700 hrs.

General weather conditions: Mostly sunny - scattered clouds - mild wind from SE

Photos

5/11/09
13:15
PR001
upstream
LaT
Long
45.05753
105.87822
05/11/2009 13:42

5/11/09
13:15
PR001
Downstream
LaT
Long
45.05753
105.87822
05/11/2009 13:47

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/11/2009	*Time:*	1700

Sample ID #: RC001

Sample location, name of river or creek: Rosebud Creek @ Rosebud Battlefield state park

County: Rosebud	*Latitude*	*Longitude*
Legal Location:	45.21679	106.98962

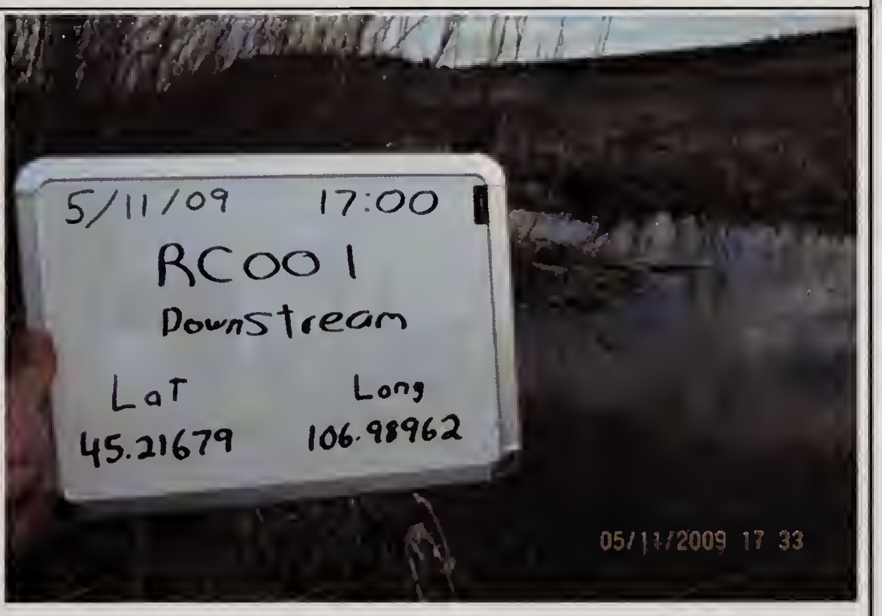
Field Parameters	
Temp, C	21.34
Cond	822
DO %	64.5
DO Mg/L	5.7
pH	8.13
NTU	0.02 (?)
Velocity fps	
Flowrate cfs	7.3

Comments:
Many cat tails and some stagnant water.

General weather conditions: Mostly cloudy - calm

Photos

5/11/09 17:00
RC001
upstream
Lat Long
45.21679 106.98962
05/11/2009 17 32


5/11/09 17:00
RC001
Downstream
Lat Long
45.21679 106.98962
05/11/2009 17 33

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/12/2009	*Time:*	0845

Sample ID #: SC002

Sample location, name of river or creek: Squirrel Creek @ Decker bridge crossing

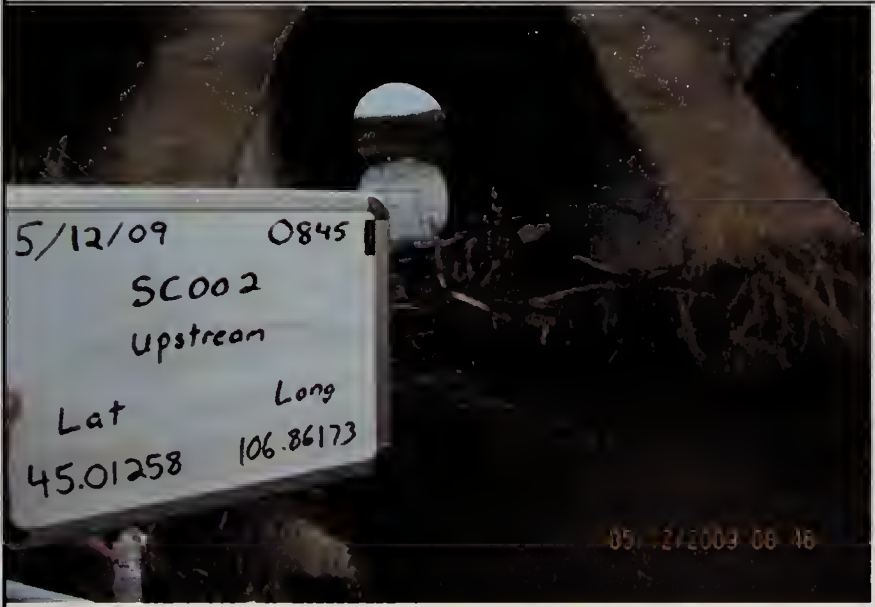
County: Big Horn	*Latitude*	*Longitude*
Legal Location:	45.01258	106.86173

Field Parameters	
Temp, C	15.92
Cond	1309
DO %	56.9
DO Mg/L	5.6
pH	8
NTU	
Velocity fps	
Flowrate cfs	4.225

Comments:

General weather conditions: Ptly cloudy - calm

Photos


5/12/09 0845
SC002
upstream
Lat Long
45.01258 106.86173
05/12/2009 08:46

5/12/09 0845
SC002
Downstream
Lat Long
45.01258 106.86173
05/12/2009 08:47

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/12/2009	*Time:*	0730

Sample ID #: TR001

Sample location, name of river or creek: Tongue River @ state line, upstream of 1st Fidelity outfall

County: Big Horn	*Latitude*	*Longitude*
Legal Location:	44.99605	106.88041

Field Parameters

Temp, C	12.68
Cond	358
DO %	52.5
DO Mg/L	5.55
pH	8.62
NTU	0.07(?)
Velocity fps	
Flowrate cfs	509

Comments:

General weather conditions: Clear & calm

Photos

5/12/09 0730
TR 001
Upstream
Lat Long
44.99605 106.88041
05/12/2009

5/12/09 0730
TR 001
Downstream
Lat Long
44.99605 106.88041
05/12/2009 07 33

Appendix 2

Water Quality Sampling Field Data Sheet			
Field representative: Matt Usuriello & Dan Freeland			
Date:	5/12/2009	*Time:*	0930
Sample ID #: TR002			
Sample location, name of river or creek: Tongue R. @ County bridge crossing			
County: Big Horn		*Latitude*	*Longitude*
Legal Location:		45.03018	106.81380

Field Parameters	
Temp, C	15.33
Cond	495
DO %	54.4
DO Mg/L	5.43
pH	8.57
NTU	
Velocity fps	
Flowrate cfs	511

Comments:

General weather conditions: Ptly cloudy - calm

Photos

5/12/09
0930
TR002
upstream
Lat
Long
45.03018
106.81380
05/12/2009 09 34

5/12/09
0930
TR002
Downstream
Lat
Long
45.03018
106.81380
05/12/2009 09 35

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/13/2009	*Time:*	1030

Sample ID #: TR003

Sample location, name of river or creek: Campground at Tongue River Dam.

County: Big Horn	*Latitude*	*Longitude*
Legal Location:	45.13836	106.76616

Field Parameters	
Temp, C	12.28
Cond	654
DO %	49
DO Mg/L	5.23
pH	8.51
NTU	
Velocity fps	
Flowrate cfs	711

Comments:

General weather conditions: Overcast, light rain/snow mix - strong winds.

Photos

5/13/09
1030
TROC3
Upstream
Lat
45.13836
Long
106.76616
05/13/2009 10 23

5/13/09
1030
TROC3
Downstream
Lat
45.13836
Long
106.76616

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/12/2009	*Time:*	1725

Sample ID #: TR004

Sample location, name of river or creek: Tongue River upstream of HWC.

County: Rosebud	*Latitude*	*Longitude*
Legal Location:	45.31153	106.52414

Field Parameters

Temp, C	13.98
Cond	654
DO %	49.1
DO Mg/L	5.06
pH	8.57
NTU	Can see botton ~ 3ft
Velocity fps	
Flowrate cfs	791

Comments:

General weather conditions: Partly cloudy - slight winds from the north.

Photos

5/12/09
1725
TR004
Upstream
Lat
Long
45.31153
106.52414
05/12/2009 17:30

5/12/09
1725
TR004
Downstream
Lat
Long
45.31153
106.52414

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/12/2009	*Time:*	1700

Sample ID #: TR005

Sample location, name of river or creek: Tongue R. dwnstrm of HWC @ Circle 3 Ranch - Art Hayes.

County: Rosebud	*Latitude*	*Longitude*
Legal Location:	45.33870	106.52528

Field Parameters	
Temp, C	13.62
Cond	681
DO %	45.1
DO Mg/L	4.68
pH	8.55
NTU	
Velocity fps	
Flowrate cfs	791

Comments:

Turbidimeter malfunction, physical observation of water appeared fairly clear.

General weather conditions: Mostly cloudy - strong winds from the north.

Photos

5/12/09
1700
TR005
upstream
Lat
45.33870
Long
106.52528

5/12/09
1700
TR005
Downstream
Lat
45.33870
Long
106.52528

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/13/2009	*Time:*	1530

Sample ID #: TR006

Sample location, name of river or creek: Tongue River upstream of Otter creek @ Hwy 212 x-ing.

County: Rosebud	*Latitude*	*Longitude*
Legal Location:	45.59325	106.28683

Field Parameters	
Temp, C	11.97
Cond	753
DO %	39.7
DO Mg/L	4.27
pH	8.56
NTU	
Velocity fps	
Flowrate cfs	750

Comments:

General weather conditions: Partly cloudy - calm.

Photos

5/13/09
1530
TR006
upstream
Lat
45.59325
Long
106.28683
05/13/2009 15 36

5/13/09
1530
TR006
Downstream
Lat
45.59325
Long
106.28683
05/13/2009 15 36

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/14/2009	*Time:*	1000

Sample ID #: TR008

Sample location, name of river or creek: Tongue R. dwnstrm of Pumpkin Ck & upstrm of TY irrigation.

County: Custer	*Latitude*	*Longitude*
Legal Location:	46.33754	105.80577

Field Parameters	
Temp, C	12.21
Cond	717
DO %	37.5
DO Mg/L	4.04
pH	8.58
NTU	
Velocity fps	
Flowrate cfs	816

Comments:
Obtained permission from the main office at the Fort Keogh Agriculture Reasearch Center to collect this sample. They were more than happy to help.

General weather conditions: Mostly sunny - calm.

Photos

5/14/09
1000
TR008
Upstream
Lat
Long
46.33754
105.80577

5/14/09
1000
TR008
Downstream
Lat
Long
46.33754
105.80577

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/14/2009	*Time:*	0830

Sample ID #: TR009

Sample location, name of river or creek: Tongue River upstream of Pumpkin Creek.

County: Custer	*Latitude*	*Longitude*
Legal Location:	46.24966	105.75237

Field Parameters	
Temp, C	10.29
Cond	748
DO %	34
DO Mg/L	3.8
pH	8.58
NTU	
Velocity fps	
Flowrate cfs	818

Comments:

General weather conditions: Partly cloudy - calm.

Photos

5/14/09
0830
TR009
Upstream
Lat
46.24966
Long
105.75237
05/14/2009 08:30

5/14/09
0830
TR009
Downstream
Lat
46.24966
Long
105.75237
05/14/2009 08 30

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date: 5/12/2009 *Time:* 1600

Sample ID #: EFHW001

Sample location, name of river or creek: East Fork Hanging Woman Creek at weir.

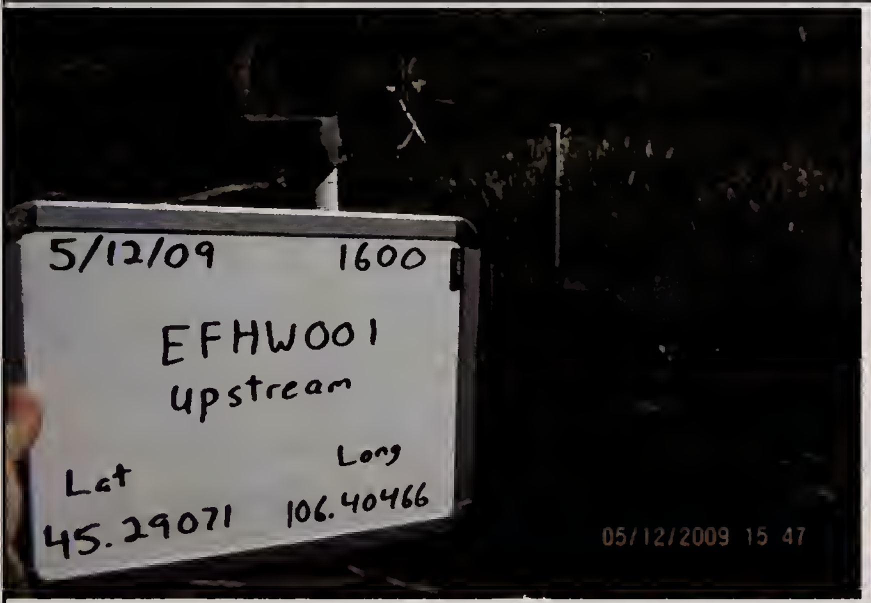
County: Rosebud	*Latitude*	*Longitude*
Legal Location:	45.29071	106.40466

Field Parameters	
Temp, C	14.99
Cond	1213
DO %	45
DO Mg/L	4.53
pH	8.23
NTU	
Velocity fps	
Flowrate cfs	0.12

Comments:
Weir level at 0.37

General weather conditions: Ptly cloudy -w/ sunshine - calm

Photos


5/12/09 1600
EFHW001
upstream
Lat 45.29071
Long 106.40466
05/12/2009 15 47

5/12/09 1600
EFHW001
Downstream
Lat 45.29071
Long 106.40466

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/12/2009	*Time:*	1500

Sample ID #: HW001

Sample location, name of river or creek: Hanging Woman Creek @ USGS station

County: Rosebud	*Latitude*	*Longitude*
Legal Location:	45.29537	106.50358

Field Parameters	
Temp, C	15.08
Cond	2767
DO %	38.5
DO Mg/L	3.85
pH	8.25
NTU	
Velocity fps	
Flowrate cfs	2.6

Comments:

Water at this location appears to be less turbid than in upstream samples.

General weather conditions: Overcast - calm

Photos

5/12/09
1500
HW001
Upstream
Lat
45.29537
Long
106.50358
05/12/2009 15:03

5/12/09
1500
HW001
Downstream
Lat
45.29537
Long
106.50358
05/12/2009 15:03

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date: 5/12/2009 *Time:* 1200

Sample ID #: HW002

Sample location, name of river or creek: Hanging Woman Creek near state line

County: Big Horn

Legal Location:

Latitude	*Longitude*
45.00109	106.42497

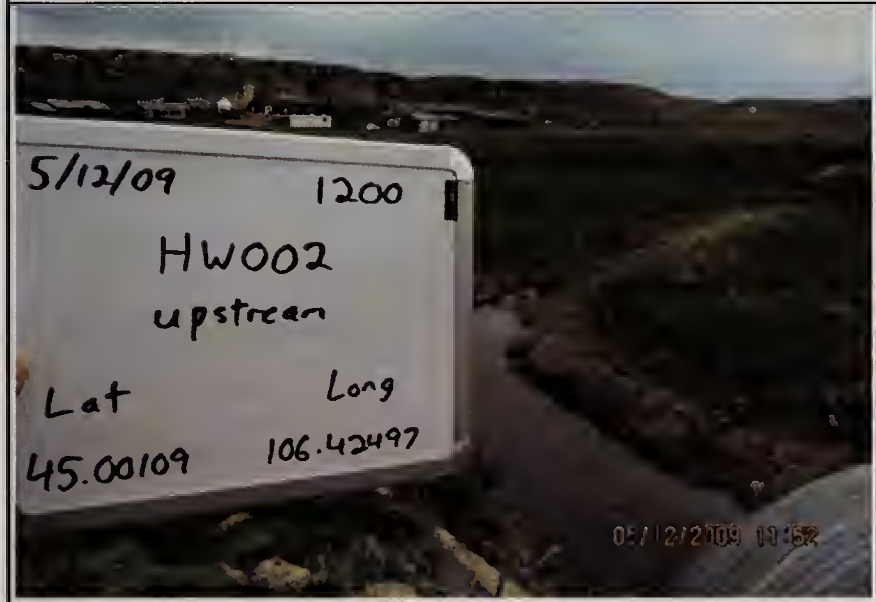
Field Parameters

Temp, C	17.6
Cond	8977
DO %	53
DO Mg/L	4.9
pH	8.19
NTU	
Velocity fps	
Flowrate cfs	0.048

Comments:
Low flow, sampled at culverts

General weather conditions: Mostly cloudy - slight wind from the North

Photos


5/12/09
1200
HW002
upstream
Lat
Long
45.00109
106.42497
05/12/2009 11:52

5/12/09
1200
HW002
Downstream
Lat
Long
45.00109
106.42497

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/12/2009	*Time:*	1300

Sample ID #: HW003

Sample location, name of river or creek: Hanging Woman Creek @ county rd 20 & 43a

County: Big Horn	*Latitude*	*Longitude*
Legal Location:	45.13398	106.48370

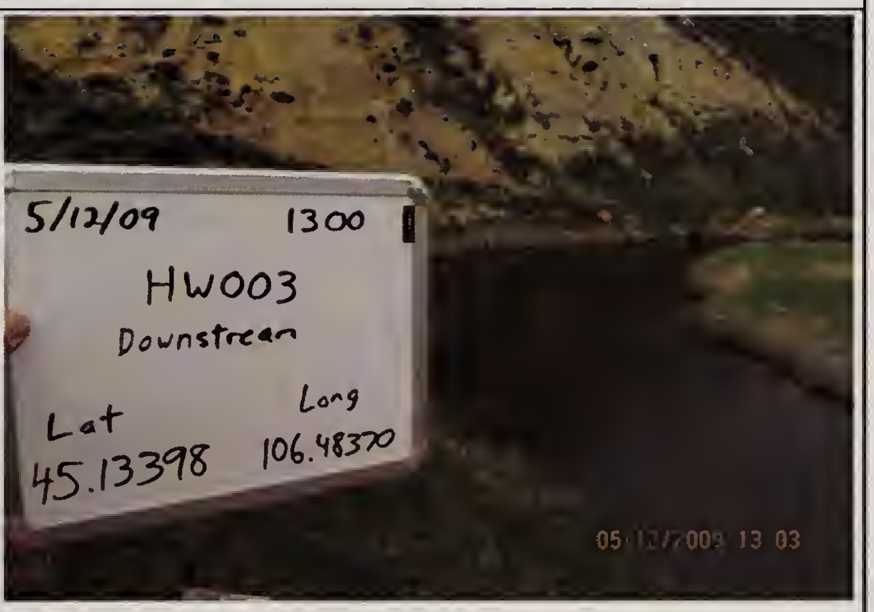
Field Parameters	
Temp, C	16.49
Cond	4435
DO %	55.4
DO Mg/L	5.33
pH	8.44
NTU	
Velocity fps	
Flowrate cfs	0.831

Comments:

General weather conditions: Overcast - light rain, no wind

Photos

5/12/09
1300
HW003
Upstream
Lat
Long
45.13398
106.48370
05/12/2009 13 04


5/12/09
1300
HW003
Downstream
Lat
Long
45.13398
106.48370
05/12/2009 13 03

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/12/2009	*Time:*	1405

Sample ID #: HW004

Sample location, name of river or creek: Hanging Woman Creek @ Lee Creek Rd

County: Rosebud	*Latitude*	*Longitude*
Legal Location:	45.25868	106.48971

Field Parameters	
Temp, C	15.26
Cond	3227
DO %	42.7
DO Mg/L	4.23
pH	8.38
NTU	
Velocity fps	
Flowrate cfs	0.922

Comments:

Noticed that the Hanna turbidimeter does not appear to be working properly. Will discontinue readings from this point on.

General weather conditions: Overcast - calm

Photos

5/12/09
1405
HW004
Upstream
Lat
Long
45.25868
106.48971

5/12/09
1405
HW004
Downstream
Lat
Long
45.25868
106.48971

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/12/2009	*Time:*	0810

Sample ID #: MT-0030457-008

Sample location, name of river or creek: Fidelity outfall near state line

County: Big Horn	*Latitude*	*Longitude*
Legal Location:	44.99861	106.88065

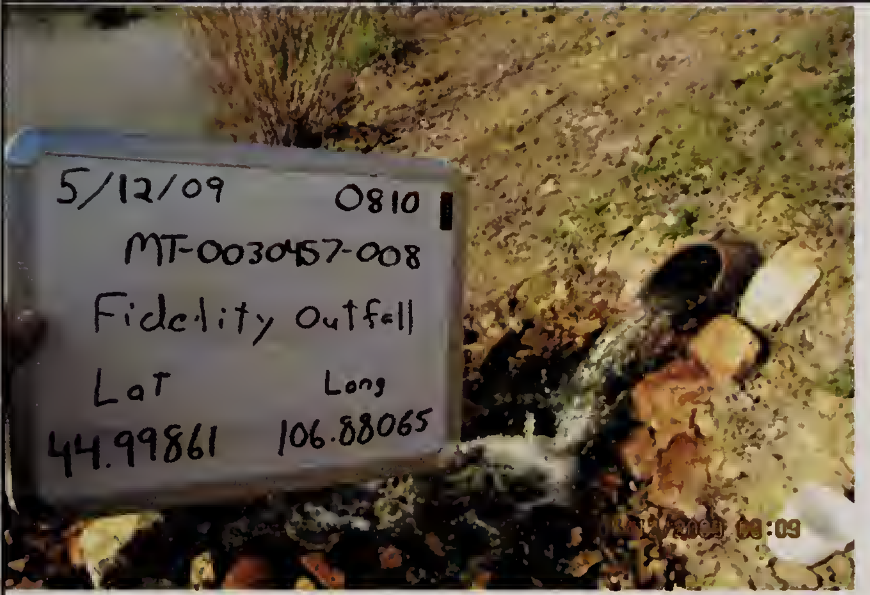
Field Parameters	
Temp, C	13.77
Cond	1553
DO %	32.1
DO Mg/L	3.3
pH	8.09(YSI) 7.87(Hanna)
NTU	
Velocity fps	
Flowrate cfs	UNK

Comments:

YSI Readings for pH is questionable. Differences noted between Hanna handheld unit and YSI. No flow measurement collected on outfall.

General weather conditions: Ptly cloudy - calm

Photos


5/12/09 0810
MT-0030457-008
Fidelity Outfall
Lat Long
44.99861 106.88065

5/12/09 0810
MT-0030457-008
Fidelity Outfall
Lat Long
44.99861 106.88065

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/13/2009	*Time:*	1600

Sample ID #: OC001

Sample location, name of river or creek: Otter Creek near mouth @ USGS station.

County: Rosebud	*Latitude*	*Longitude*
Legal Location:	45.59923	106.27097

Field Parameters	
Temp, C	11.23
Cond	2984
DO %	39.2
DO Mg/L	4.26
pH	8.5
NTU	
Velocity fps	
Flowrate cfs	9.7

Comments:

General weather conditions: Sunny/partly cloudy - light wind.

Photos

5/13/09
1600
OC001
upstream
Lat
Long
45.59923
106.27097

5/13/09
1600
OC001
Downstream
Lat
Long
45.59923
106.27097

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/13/2009	*Time:*	1245

Sample ID #: OC002

Sample location, name of river or creek: Bridge x-ing @ Otter Creek Rd South of FR791.

County: Powder River	*Latitude*	*Longitude*
Legal Location:	45.24924	106.16207

Field Parameters	
Temp, C	11.52
Cond	3274
DO %	42.5
DO Mg/L	4.58
pH	8.34
NTU	
Velocity fps	
Flowrate cfs	~ 1.0

Comments:

Wide Braided Channel - Low flow - No flow measurement taken. Estimate =< 1CFS

General weather conditions: Overcast, rain - strong wind.

Photos

5/13/09
1245
OC002
upstream
Lat
Long
45.24924
106.16207
05 13 2009 12 5

5/13/09
1245
OC002
Downstream
Lat
Long
45.24924
106.16207

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/13/2009	*Time:*	1330

Sample ID #: OC003

Sample location, name of river or creek: Otter Creek @ 15 mile x-ing.

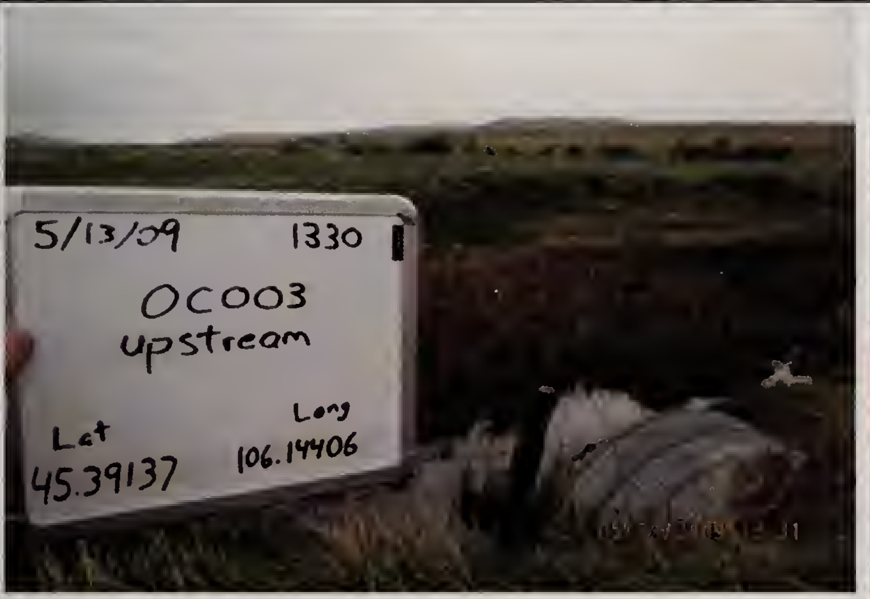
County: Powder River	*Latitude*	*Longitude*
Legal Location:	45.39137	106.14406

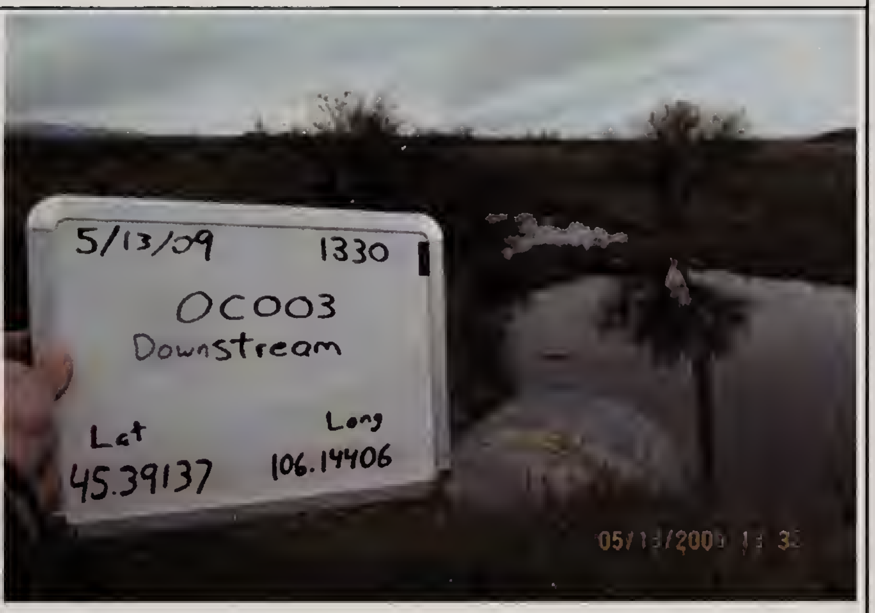
Field Parameters	
Temp, C	7.45
Cond	3323
DO %	28.7
DO Mg/L	3.4
pH	8.23
NTU	
Velocity fps	
Flowrate cfs	2.2

Comments:

General weather conditions: Overcast - rain/snow mix - strong winds.

Photos


5/13/09
1330
OC003
upstream
Lat
45.39137
Long
106.14406


5/13/09
1330
OC003
Downstream
Lat
45.39137
Long
106.14406

Appendix 2

Water Quality Sampling Field Data Sheet

Field representative: Matt Usuriello & Dan Freeland

Date:	5/12/2009	*Time:*	1005

Sample ID #: DC001

Sample location, name of river or creek: Deer Creek @ County Rd 26

County: Big Horn	*Latitude*	*Longitude*
Legal Location:	45.05537	106.70294

Field Parameters	
Temp, C	15.26
Cond	6669
DO %	59
DO Mg/L	5.78
pH	8.11
NTU	
Velocity fps	
Flowrate cfs	0.0315

Comments:

General weather conditions: Mostly cloudy - calm

Photos

5/12/09 1005
DC001
upstream
Lat Long
45.05537 106.70294

5/12/09 1005
DC001
Downstream
Lat Long
45.05537 106.70294

Appendix 3

Flow Measurement Fieldsheet

Date 5/13/2009 **Time** 1330

Initials MU & DF **Project** Tongue River CBM Sampling Project

Stream Otter Creek

Lat/Long 45.39137 106.14406

Sample Name OC003

Start Time 1335

Total Stream Width 8ft culvert

Cell	Total Distance From Bank (ft)	Cell Width (ft) X	Total Depth (ft) X	Velocity (ft/s) =	Discharge Rate (cfs)
1	NA	NA	0.6	1.7	2.2
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

End Time 1340 **Total CFS** 2.2

Comments

Calculated flow rate based on 8-ft diameter culvert and one flow measurement in the middle of the stream.

Appendix 3

Flow Measurement Fieldsheet

Date 5/11/2009 **Time** 1700

Initials MU & DF **Project** Tongue River CBM Sampling Project

Stream Rosebud Creek

Lat/Long 45.21679 106.98962

Sample Name RC001

Start Time 1722

Total Stream Width 12ft

Cell	Total Distance From Bank (ft)	Cell Width (ft) X	Total Depth (ft) X	Velocity (ft/s) =	Discharge Rate (cfs)
1	1	2	1.1	1.03	2.266
2	3	2	1.45	0.81	2.349
3	5	2	1.4	0.7	1.96
4	7	2	1	0.07	0.14
5	9	2	1	0.19	0.38
6	11	2	1.2	0.1	0.24
7					
8					
9					
10					
11					
12					
13					
14					

End Time 1728 **Total CFS** 7.3

Comments

Cat tails, some stagnant water near banks.

Appendix 3

Flow Measurement Fieldsheet

Date 5/12/2009 **Time** 845

Initials MU & DF **Project** Tongue River CBM Sampling Project

Stream Squirrel Creek

Lat/Long 45.01258 106.86173

Sample Name SC002

Start Time 0845

Total Stream Width 3.5ft

Cell	Total Distance From Bank (ft)	Cell Width (ft) X	Total Depth (ft) X	Velocity (ft/s) =	Discharge Rate (cfs)
1	0.5	0.5	0.6	0.46	0.138
2	1	0.5	0.7	1.6	0.56
3	1.5	0.5	0.8	1.68	0.672
4	2	0.5	0.95	1.63	0.774
5	2.5	0.5	0.95	0.42	0.2
6	3	0.5	0.8	2.95	1.18
7	3.5	0.5	0.75	1.87	0.701
8					
9					
10					
11					
12					
13					
14					

End Time 0858 **Total CFS** 4.225

Comments

Narrow channel, turbid.

Appendix 3

Flow Measurement Fieldsheet

Date 5/12/2009 **Time** 1005

Initials MU & DF **Project** Tongue River CBM Sampling Project

Stream Deer Creek

Lat/Long 45.05537 106.70294

Sample Name DC001

Start Time 1023

Total Stream Width 1.5ft

Cell	Total Distance From Bank (ft)	Cell Width (ft) X	Total Depth (ft) X	Velocity (ft/s) =	Discharge Rate (cfs)
1	0	0.75	0.2	0.09	0.0135
2		0.75	0.15	0.16	0.018
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

End Time 1027 **Total CFS** 0.0315

Comments

Appendix 3

Flow Measurement Fieldsheet

Date 5/12/2009 **Time** 1200

Initials MU & DF **Project** Tongue River CBM Sampling Project

Stream Hanging Woman Creek - @ Forks ranch on county road.

Lat/Long 45.00109 106.42497

Sample Name HW002

Start Time 1200

Total Stream Width 1ft

Cell	Total Distance From Bank (ft)	Cell Width (ft) X	Total Depth (ft) X	Velocity (ft/s) =	Discharge Rate (cfs)
1	0.25	0.5	0.5	0.1	0.025
2	0.75	0.5	0.5	0.09	0.0225
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

End Time 1205 **Total CFS** 0.0475

Comments

Appendix 3

Flow Measurement Fieldsheet

Date 5/12/2009 **Time** 1300

Initials MU & DF **Project** Tongue River CBM Sampling Project

Stream Hanging Woman Creek @ county road 20 & 43a

Lat/Long 45.13398 106.4837

Sample Name HW003

Start Time 1307

Total Stream Width 2ft

Cell	Total Distance From Bank (ft)	Cell Width (ft) X	Total Depth (ft) X	Velocity (ft/s) =	Discharge Rate (cfs)
1	0.25	0.5	0.75	0.08	0.56
2	0.75	0.5	1	0.17	0.085
3	1.25	0.5	0.95	0.24	0.114
4	1.75	0.5	0.9	0.16	0.072
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

End Time 1312 **Total CFS** 0.831

Comments

Appendix 3

Flow Measurement Fieldsheet

Date 5/12/2009 **Time** 1405

Initials MU & DF **Project** Tongue River CBM Sampling Project

Stream Hanging Woman Creek @ Lee Creek Road.

Lat/Long 45.25868 106.48971

Sample Name HW004

Start Time 1434

Total Stream Width 12ft

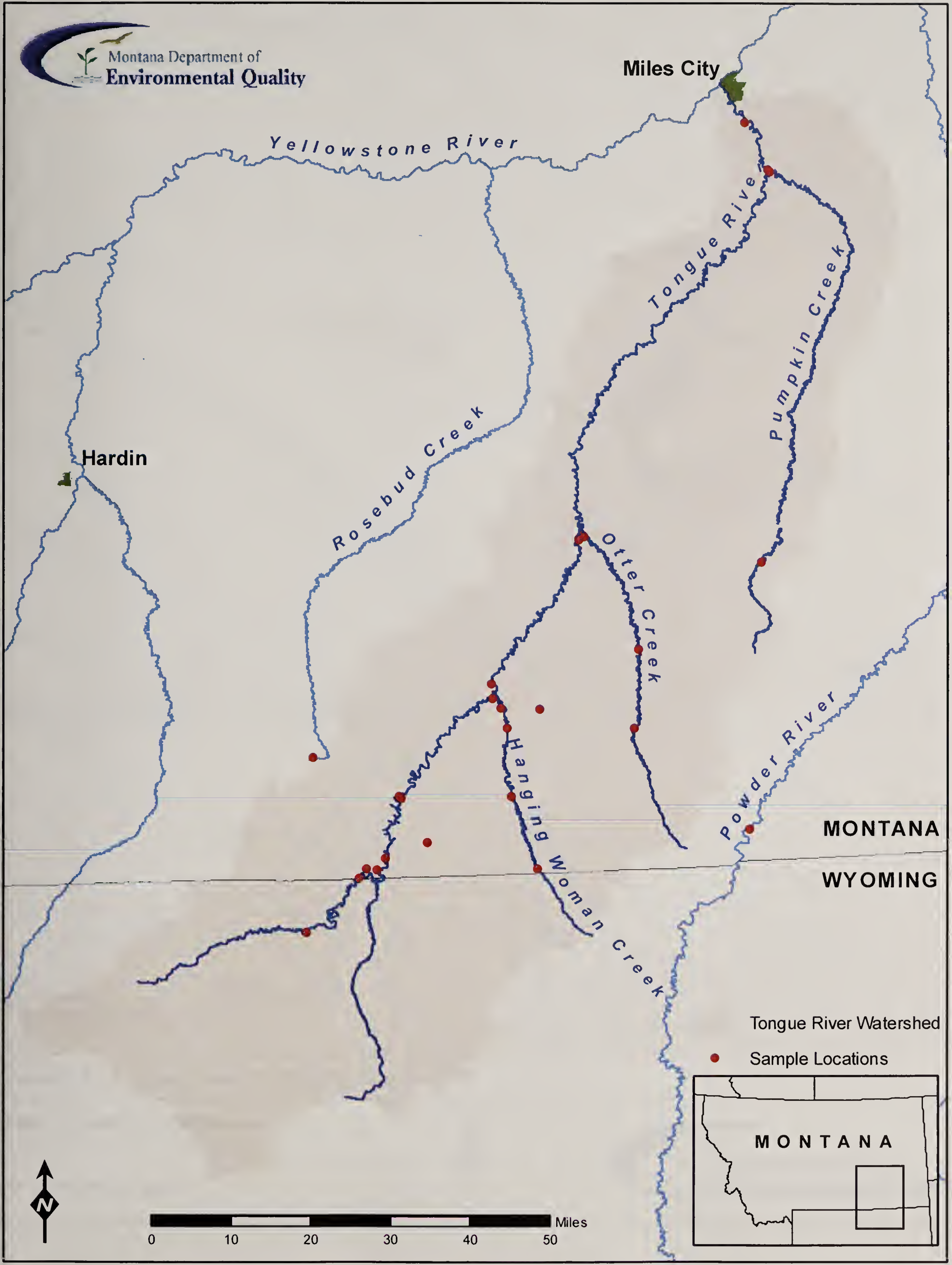
Cell	Total Distance From Bank (ft)	Cell Width (ft) X	Total Depth (ft) X	Velocity (ft/s) =	Discharge Rate (cfs)
1	1	2	0.3	-0.12	-0.072
2	3	2	0.5	-0.1	-0.1
3	5	2	0.7	0	0
4	7	2	0.85	0.42	0.884
5	9	2	0.9	0.14	0.126
6	11	2	0.6	0.14	0.084
7					
8					
9					
10					
11					
12					
13					
14					

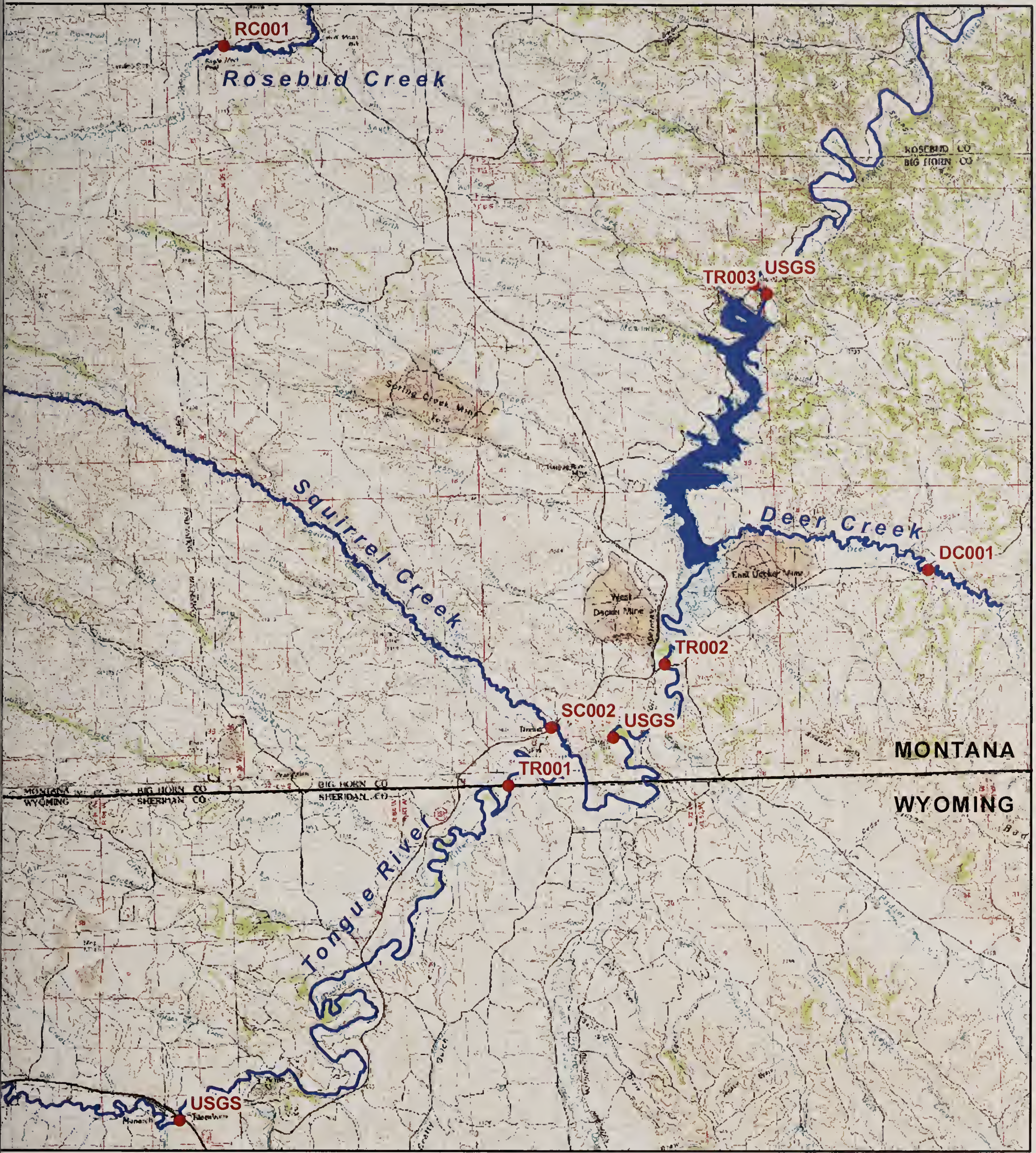
End Time 1440 **Total CFS** 0.922

Comments

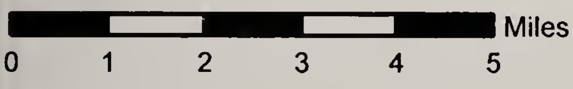
Last reading at 11ft appeared to have interference from algae growth.

Appendix 4. Tongue River CBM Sampling Project


Montana Department of Environmental Quality
Miles City
Yellowstone River
Tongue River
Pumpkin Creek
Rosebud Creek
Hardin
Otter Creek
Hanging Woman Creek
Powder River
MONTANA
WYOMING
Tongue River Watershed
● Sample Locations
MONTANA
N
0
10
20
30
40
50
Miles

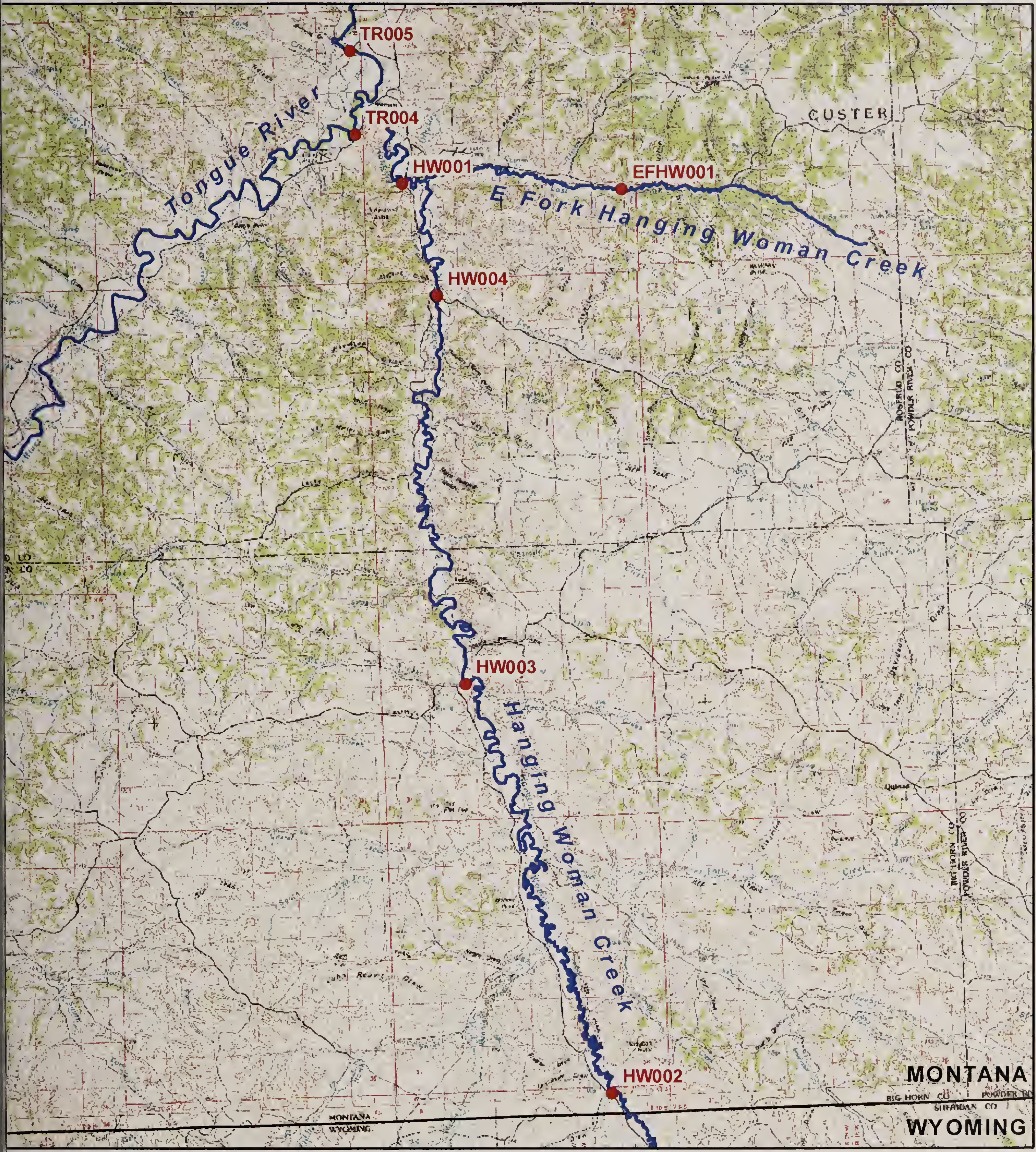

RC001
Rosebud Creek
ROSEBUD CO
BIG HORN CO
TR003
USGS
Spring Creek Mine
Deer Creek
DC001
East Decker Mine
West Decker Mine
Squirrel Creek
TR002
SC002
USGS
TR001
MONTANA
WYOMING
MONTANA
WYOMING
BIG HORN CO
SHERIDAN CO
BIG HORN CO
SHERIDAN CO
Tongue River
USGS

Appendix 4. Tongue River CBM Sampling Project


Miles
0
1
2
3
4
5

● Sample Locations

Montana Department of Environmental Quality


TR005
TR004
Tongue River
HW001
EFHW001
E Fork Hanging Woman Creek
CUSTER
HW004
ROSEBUD CO
POWDER RIVER CO
HW003
Hanging Woman Creek
BIG HORN CO
POWDER RIVER CO
HW002
MONTANA
BIG HORN CO
POWDER RIVER CO
SHERIDAN CO
WYOMING
MONTANA
WYOMING

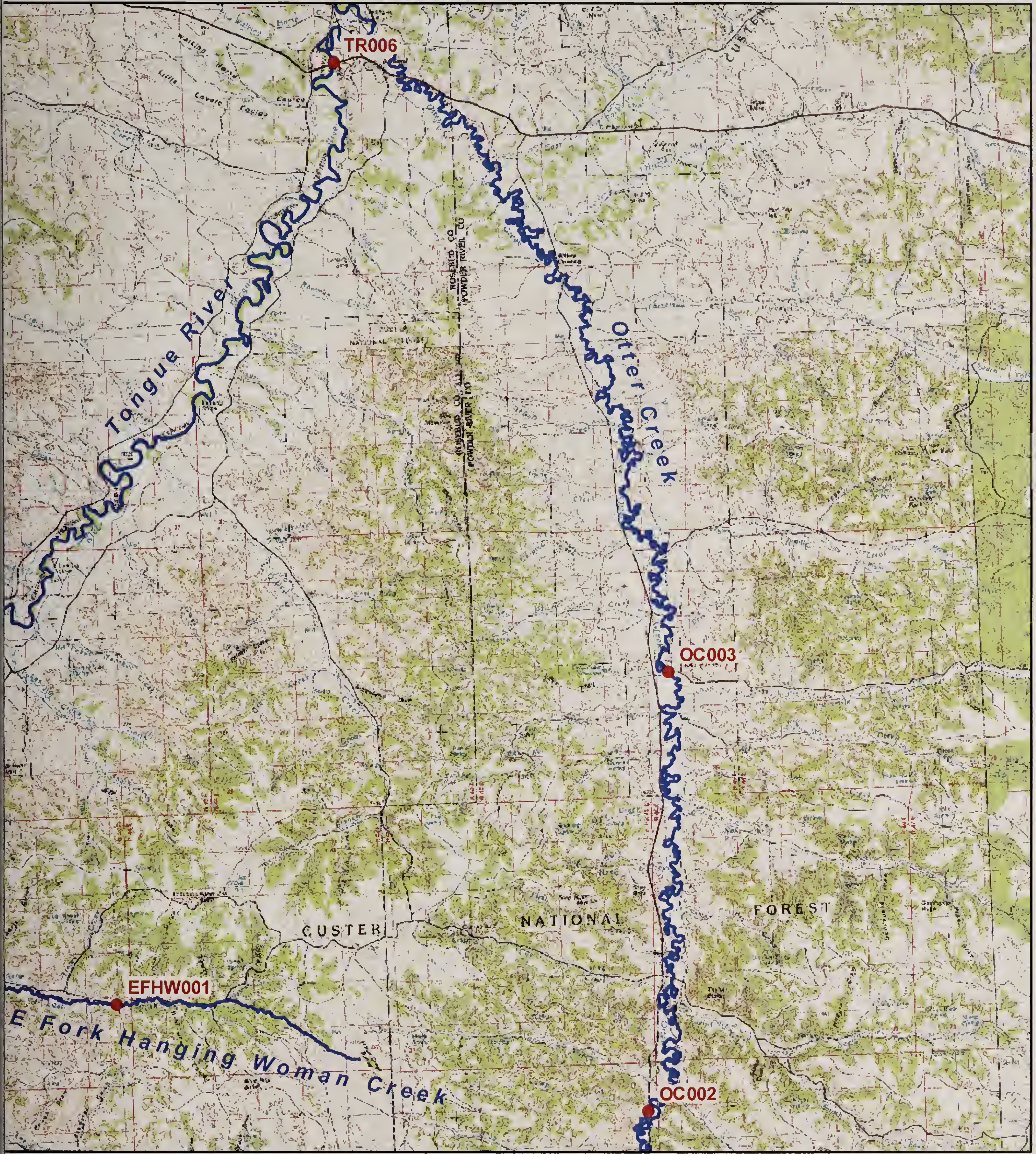
Appendix 4. Tongue River CBM Sampling Project

0 1 2 3 4 5 Miles

● Sample Locations

N

Montana Department of
Environmental Quality

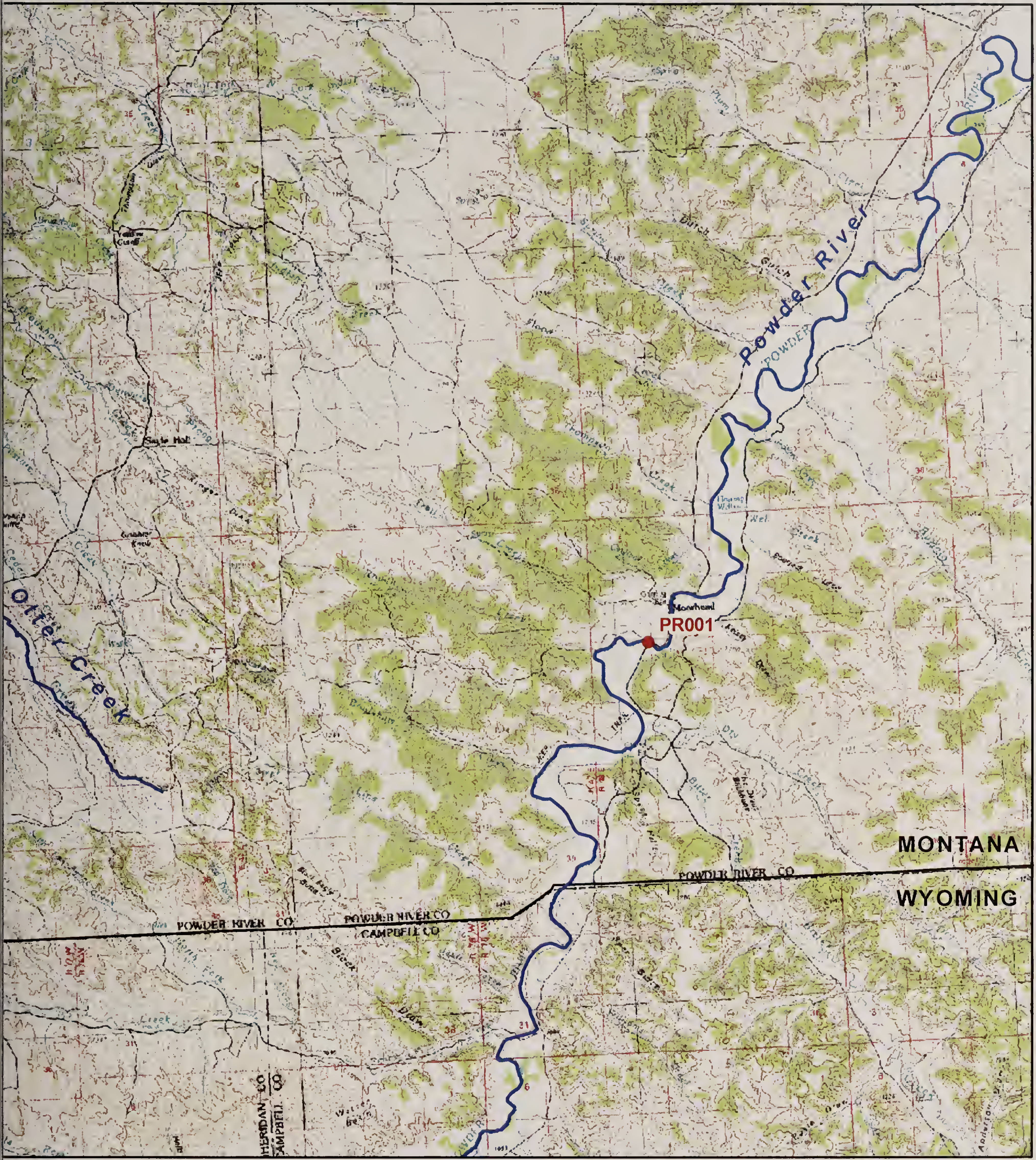

TR006
Tongue River
Otter Creek
OC003
CUSTER
NATIONAL
FOREST
EFHW001
E Fork Hanging Woman Creek
OC002
ROSEBUD CO
POWDER RIVER CO

ppendix 4. Tongue River CBM Sampling Project

0 1 2 3 4 5 Miles
N

● Sample Locations

Montana Department of
Environmental Quality

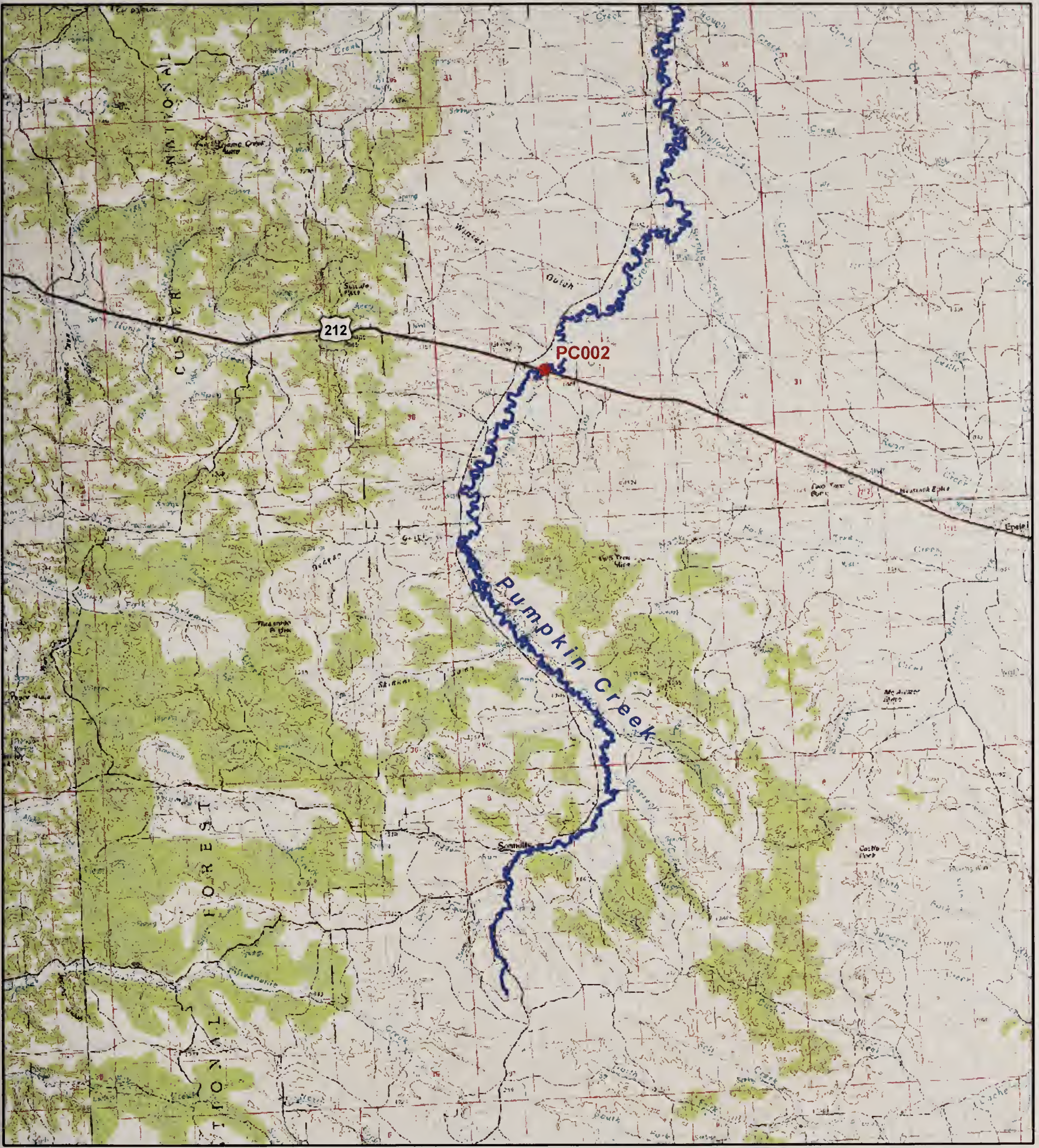

Powder River
POWDER
PR001
Moorhead
Otter Creek
MONTANA
WYOMING
POWDER RIVER CO
POWDER RIVER CO
CAMPBELL CO
SHERIDAN CO
CAMPBELL CO

Appendix 4. Tongue River CBM Sampling Project

0 1 2 3 4 5 Miles
N

● Sample Locations

Montana Department of
Environmental Quality

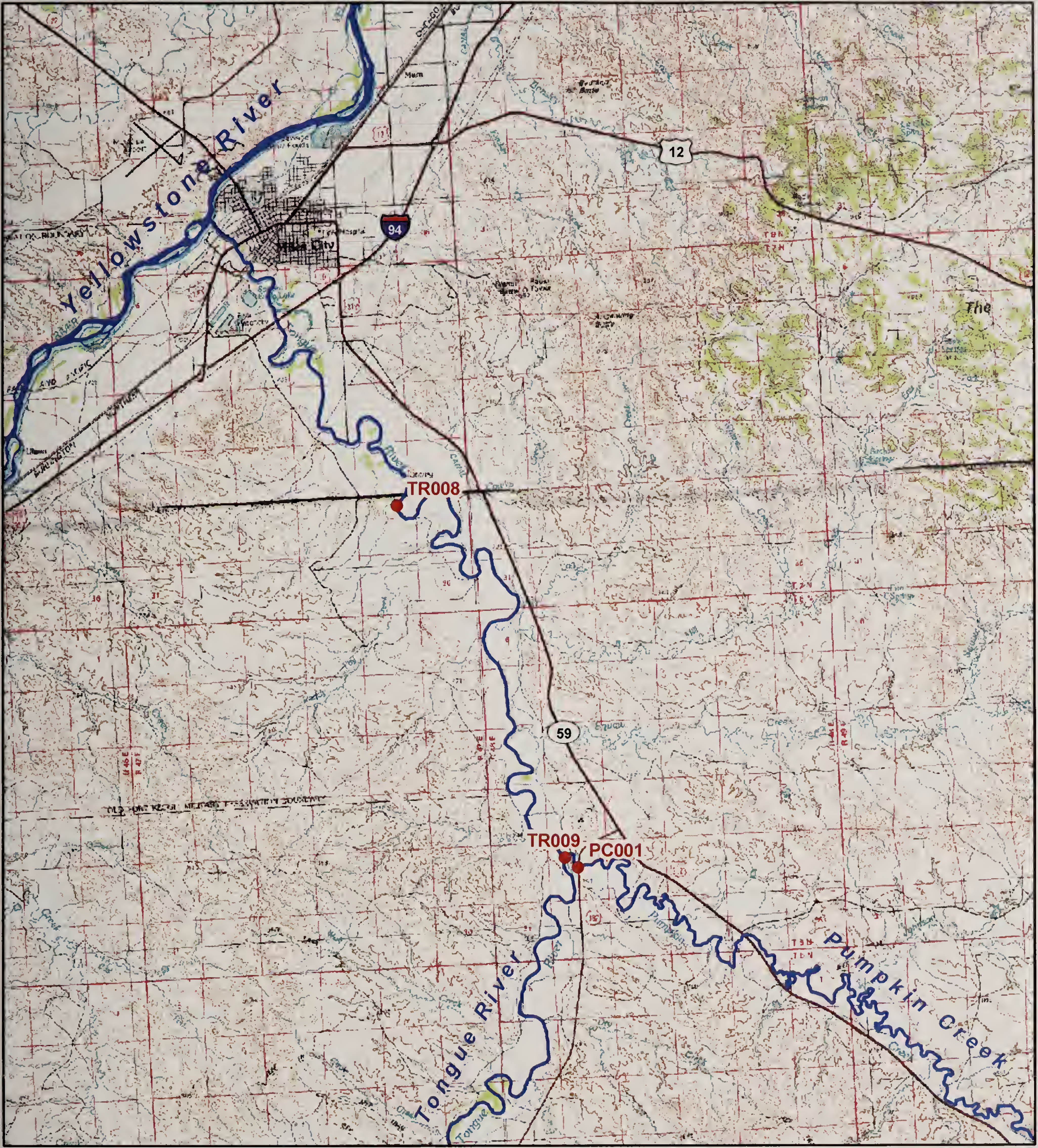

PC002
Pumpkin Creek
212
CUSTER NATIONAL FOREST

Appendix 4. Tongue River CBM Sampling Project

0 1 2 3 4 5 Miles
N

● Sample Locations

Montana Department of Environmental Quality


Yellowstone River
Miles City
94
12
59
TR008
TR009
PC001
Tongue River
Pumpkin Creek

Appendix 4. Tongue River CBM Sampling Project

Miles
0 1 2 3 4 5

● Sample Locations

N

Montana Department of
Environmental Quality

DPHHS ENVIRONMENTAL LABORATORY

Tongue River CBM Sampling Project

Appenidix 5: Analytical Results

Lab#	Sample ID	Test Name	Flag	Result	Units	Collect Date	Analysis Date	Analtical Method	Note
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Total Phosphorous		0.495	mg/L	5/11/2009	6/1/2009	EPA 365.1	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Nitrite Nitrogen	<	0.01	mg/L	5/11/2009	5/20/2009	EPA 300.0	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Nitrate plus Nitrite as N		0.19	mg/L	5/11/2009	5/20/2009	EPA 300.0	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Nitrate as N		0.19	mg/L	5/11/2009	5/20/2009	EPA 300.0	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Chloride		60.0	mg/L	5/11/2009	5/20/2009	EPA 300.0	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Fluoride		0.40	mg/L	5/11/2009	5/20/2009	EPA 300.0	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Sulfate		387	mg/L	5/11/2009	5/20/2009	EPA 300.0	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Manganese		0.316	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Potassium		6.74	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Cation Milliequivalent		15.1	meq/L	5/11/2009	6/5/2009	SM 1050 A	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Anion Milliequivalent		12.7	meq/L	5/11/2009	6/5/2009	SM 1050 A	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Calcium		109	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Magnesium		41.5	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Sodium		140	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Sodium Adsorption Ratio		2.90	ratio	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Total Hardness as CaCO3		444	Mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Aluminum - Dissolved		0.01	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Arsenic - Dissolved	<	0.001	mg/L	5/11/2009	5/19/2009	EPA 200.9	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Cadmium - Dissolved	<	0.001	mg/L	5/11/2009	5/19/2009	EPA 200.9	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Copper - Dissolved		0.001	mg/L	5/11/2009	5/18/2009	EPA 200.9	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Iron - Dissolved	<	0.01	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Lead - Dissolved	<	0.0005	mg/L	5/11/2009	5/19/2009	EPA 200.9	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Nickel - Dissolved	<	0.01	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Zinc - Dissolved		0.002	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Aluminum - Total Recoverable		4.92	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Arsenic-Total Recoverable		0.006	mg/L	5/11/2009	5/19/2009	EPA 200.8	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Barium-Total Recoverable		0.164	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Beryllium-Total Recoverable	<	0.001	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Cadmium-Total Recoverable	<	0.001	mg/L	5/11/2009	5/19/2009	EPA 200.8	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Copper-Total Recoverable		0.013	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Iron-Total Recoverable		10.0	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Lead-Total Recoverable		0.0107	mg/L	5/11/2009	5/19/2009	EPA 200.8	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Nickel-Total Recoverable		0.01	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Selenium-Total Recoverable		0.002	mg/L	5/11/2009	5/19/2009	EPA 200.8	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Zinc-Total Recoverable		0.046	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Uranium - Total Recoverable		0.006	mg/L	5/11/2009	5/19/2009	EPA 200.8	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Chromium-Total Recoverable		0.007	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Specific Conductance		1190	mmohs/cm	5/11/2009	5/20/2009	SM 2510-B	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Total Dissolved Solids at 180 deg. C		1030	mg/L	5/11/2009	5/18/2009	SM 2540 C	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Total Suspended Solids at 105 deg. C		358	mg/L	5/11/2009	5/18/2009	SM 2540 D	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Alkalinity in Water		182	mg/L	5/11/2009	5/20/2009	SM 2320 B	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Bicarbonate as CaCO3		178	mg/L	5/11/2009	5/20/2009	SM 2320 B	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	Carbonate		4.11	mg/L	5/11/2009	5/20/2009	SM 2320 B	PH 8.1 CFS 918
D0905001-001	PR001_45.05753_ 105.87822 ste 1	pH		8.37	pH	5/11/2009	5/20/2009	EPA 150.1	PH 8.1 CFS 918
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Total Phosphorous		0.024	mg/L	5/11/2009	6/1/2009	EPA 365.1	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Nitrite Nitrogen	<	0.01	mg/L	5/11/2009	5/20/2009	EPA 300.0	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Nitrate plus Nitrite as N	<	0.01	mg/L	5/11/2009	5/20/2009	EPA 300.0	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Nitrate as N	<	0.01	mg/L	5/11/2009	5/20/2009	EPA 300.0	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Chloride		2.58	mg/L	5/11/2009	5/20/2009	EPA 300.0	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Fluoride		0.33	mg/L	5/11/2009	5/20/2009	EPA 300.0	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Sulfate		214	mg/L	5/11/2009	5/20/2009	EPA 300.0	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Manganese		0.050	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Potassium		4.59	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Cation Milliequivalent		12.2	meq/L	5/11/2009	6/5/2009	SM 1050 A	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Anion Milliequivalent		10.2	meq/L	5/11/2009	6/5/2009	SM 1050 A	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Calcium		100	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Magnesium		75.8	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Sodium		20.7	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Sodium Adsorption Ratio		0.4	ratio	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Total Hardness as CaCO3		563	Mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Aluminum - Dissolved		0.02	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Arsenic - Dissolved	<	0.001	mg/L	5/11/2009	5/19/2009	EPA 200.9	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Cadmium - Dissolved	<	0.001	mg/L	5/11/2009	5/19/2009	EPA 200.9	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Copper - Dissolved		0.003	mg/L	5/11/2009	5/18/2009	EPA 200.9	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Iron - Dissolved		0.08	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Lead - Dissolved		0.0006	mg/L	5/11/2009	5/19/2009	EPA 200.9	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Nickel - Dissolved		0.02	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Zinc - Dissolved		0.058	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Aluminum - Total Recoverable		0.05	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Arsenic-Total Recoverable	<	0.001	mg/L	5/11/2009	5/19/2009	EPA 200.8	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Barium-Total Recoverable		0.057	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Beryllium-Total Recoverable	<	0.001	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Cadmium-Total Recoverable	<	0.001	mg/L	5/11/2009	5/19/2009	EPA 200.8	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Copper-Total Recoverable		0.001	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Iron-Total Recoverable		0.17	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Lead-Total Recoverable	<	0.0005	mg/L	5/11/2009	5/19/2009	EPA 200.8	PH 8.13 CFS 7.3

DPHHS ENVIRONMENTAL LABORATORY

Tongue River CBM Sampling Project

Appenidix 5: Analytical Results

Lab#	Sample ID	Test Name	Flag	Result	Units	Collect Date	Analysis Date	Analtical Method	Note
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Nickel-Total Recoverable	<	0.01	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Selenium-Total Recoverable	<	0.001	mg/L	5/11/2009	5/19/2009	EPA 200.8	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Zinc-Total Recoverable		0.004	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Uranium - Total Recoverable		0.003	mg/L	5/11/2009	5/19/2009	EPA 200.8	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Chromium-Total Recoverable	<	0.001	mg/L	5/11/2009	5/18/2009	EPA 200.7	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Specific Conductance		900	mmohs/cm	5/11/2009	5/20/2009	SM 2510-B	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Total Dissolved Solids at 180 deg. C		228	mg/L	5/11/2009	5/18/2009	SM 2540 C	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Total Suspended Solids at 105 deg. C		28.0	mg/L	5/11/2009	5/18/2009	SM 2540 D	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Alkalinity in Water		348	mg/L	5/11/2009	5/20/2009	SM 2320 B	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Bicarbonate as CaCO3		339	mg/L	5/11/2009	5/20/2009	SM 2320 B	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	Carbonate		8.72	mg/L	5/11/2009	5/20/2009	SM 2320 B	PH 8.13 CFS 7.3
D0905001-002	RC001_45.21679_ 106.98962 ste 1	pH		8.36	pH	5/11/2009	5/20/2009	EPA 150.1	PH 8.13 CFS 7.3
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Total Phosphorous		0.043	mg/L	5/12/2009	6/1/2009	EPA 365.1	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Nitrite Nitrogen	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Nitrate plus Nitrite as N	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Nitrate as N	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Chloride		2.91	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Fluoride		0.14	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Sulfate		63.0	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Manganese		0.054	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Potassium		1.62	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Cation Milliequivalent		4.69	meq/L	5/12/2009	6/5/2009	SM 1050 A	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Anion Milliequivalent		3.85	meq/L	5/12/2009	6/5/2009	SM 1050 A	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Calcium		45.7	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Magnesium		21.8	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Sodium		13.2	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Sodium Adsorption Ratio		0.4	ratio	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Total Hardness as CaCO3		204	Mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Aluminum - Dissolved		0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Arsenic - Dissolved	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Cadmium - Dissolved	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Copper - Dissolved		0.001	mg/L	5/12/2009	5/18/2009	EPA 200.9	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Iron - Dissolved		0.05	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Lead - Dissolved	<	0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Nickel - Dissolved	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Zinc - Dissolved		0.006	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Aluminum - Total Recoverable		0.28	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Arsenic-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Barium-Total Recoverable		0.046	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Beryllium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Cadmium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Copper-Total Recoverable		0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Iron-Total Recoverable		0.47	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Lead-Total Recoverable		0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Nickel-Total Recoverable	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Selenium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Zinc-Total Recoverable		0.004	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Uranium - Total Recoverable		0.002	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Chromium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Specific Conductance		388	mmohs/cm	5/12/2009	5/20/2009	SM 2510-B	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Total Dissolved Solids at 180 deg. C		221	mg/L	5/12/2009	5/18/2009	SM 2540 C	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Total Suspended Solids at 105 deg. C		23.8	mg/L	5/12/2009	5/18/2009	SM 2540 D	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Alkalinity in Water		150	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Bicarbonate as CaCO3		144	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	Carbonate		6.25	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.62 CFS 509
D0905001-003	TR001_44.99605_ 106.88041 ste 1	pH		8.43	pH	5/12/2009	5/20/2009	EPA 150.1	PH 8.62 CFS 509
D0905001-004	MT 0030457-008_44.99861_106.88065 RAW	Specific Conductance		1790	mmohs/cm	5/11/2009	5/20/2009	SM 2510-B	PH 8.9
D0905001-005	MT0030457-008_44.99861_106.88065 SAR	Calcium		5.54	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.9
D0905001-005	MT0030457-008_44.99861_106.88065 SAR	Magnesium		1.92	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.9
D0905001-005	MT0030457-008_44.99861_106.88065 SAR	Sodium		477	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.9
D0905001-005	MT0030457-008_44.99861_106.88065 SAR	Sodium Adsorption Ratio		44.5	ratio	5/12/2009	5/18/2009	EPA 200.7	PH 8.9
D0905001-006	HW004-45.25868_106.48971	Total Phosphorous		0.049	mg/L	5/12/2009	6/1/2009	EPA 365.1	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Nitrite Nitrogen	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Nitrate plus Nitrite as N		0.02	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Nitrate as N		0.02	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Chloride		17.6	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Fluoride		0.89	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Sulfate		1910	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Potassium		21.4	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Cation Milliequivalent		47.0	meq/L	5/12/2009		SM 1050 A	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Anion Milliequivalent		48.0	meq/L	5/12/2009		SM 1050 A	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Calcium		138	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Magnesium		196	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92

DPHHS ENVIRONMENTAL LABORATORY
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Lab#	Sample ID	Test Name	Flag	Result	Units	Collect Date	Analysis Date	Analtical Method	Note
D0905001-006	HW004-45.25868_106.48971	Sodium		539	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Sodium Adsorption Ratio		6.91	ratio	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Total Hardness as CaCO3		1150	Mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Aluminum - Dissolved		0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Cadmium - Dissolved	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Arsenic - Dissolved		0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Copper - Dissolved		0.001	mg/L	5/12/2009	5/18/2009	EPA 200.9	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Iron - Dissolved		0.07	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Lead - Dissolved	<	0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Nickel - Dissolved	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Zinc - Dissolved		0.008	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Aluminum - Total Recoverable		0.26	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Barium-Total Recoverable		0.014	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Beryllium-Total Recoverable		0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Cadmium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Chromium-Total Recoverable		0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Copper-Total Recoverable		0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Iron-Total Recoverable		0.95	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Lead-Total Recoverable		0.0006	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Nickel-Total Recoverable	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Selenium-Total Recoverable		0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Zinc-Total Recoverable		0.006	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Uranium - Total Recoverable		0.016	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Manganese		0.117	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Arsenic-Total Recoverable		0.002	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Specific Conductance		3580	mmohs/cm	5/12/2009	5/20/2009	SM 2510-B	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Total Dissolved Solids at 180 deg. C		3080	mg/L	5/12/2009	5/18/2009	SM 2540 C	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Total Suspended Solids at 105 deg. C		2.40	mg/L	5/12/2009	5/18/2009	SM 2540 D	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Alkalinity in Water		464	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Bicarbonate as CaCO3		458	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	Carbonate		6.50	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.38 CFS 0.92
D0905001-006	HW004-45.25868_106.48971	pH		8.33	pH	5/12/2009	5/20/2009	EPA 150.1	PH 8.38 CFS 0.92
D0905001-007	HW001-45.29537_106.50358	Total Phosphorous		0.048	mg/L	5/12/2009	6/1/2009	EPA 365.1	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Nitrite Nitrogen	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Nitrate plus Nitrite as N		0.03	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Nitrate as N		0.03	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Chloride		15.9	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Fluoride		1.08	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Sulfate		1500	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Potassium		20.9	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Cation Milliequivalent		42.3	meq/L	5/12/2009		SM 1050 A	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Anion Milliequivalent		40.1	meq/L	5/12/2009		SM 1050 A	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Calcium		122	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Magnesium		176	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Sodium		488	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Sodium Adsorption Ratio		6.61	ratio	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Total Hardness as CaCO3		1030	Mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Aluminum - Dissolved		0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Cadmium - Dissolved	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Arsenic - Dissolved		0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Copper - Dissolved		0.001	mg/L	5/12/2009	5/18/2009	EPA 200.9	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Iron - Dissolved		0.05	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Lead - Dissolved	<	0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Nickel - Dissolved	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Zinc - Dissolved		0.006	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Aluminum - Total Recoverable		0.03	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Barium-Total Recoverable		0.020	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Beryllium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Cadmium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Chromium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Copper-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Iron-Total Recoverable		0.31	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Lead-Total Recoverable	<	0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Nickel-Total Recoverable	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Selenium-Total Recoverable		0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Zinc-Total Recoverable		0.004	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Uranium - Total Recoverable		0.013	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Manganese		0.030	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Arsenic-Total Recoverable		0.002	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Specific Conductance		3230	mmohs/cm	5/12/2009	5/20/2009	SM 2510-B	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Total Dissolved Solids at 180 deg. C		2710	mg/L	5/12/2009	5/18/2009	SM 2540 C	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Total Suspended Solids at 105 deg. C		1.80	mg/L	5/12/2009	5/18/2009	SM 2540 D	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Alkalinity in Water		512	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Bicarbonate as CaCO3		512	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	Carbonate	<	1.00	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.25 CFS 2.6
D0905001-007	HW001-45.29537_106.50358	pH		8.28	pH	5/12/2009	5/20/2009	EPA 150.1	PH 8.25 CFS 2.6

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Appenidix 5: Analytical Results

Lab#	Sample ID	Test Name	Flag	Result	Units	Collect Date	Analysis Date	Analtical Method	Note
D0905001-008	EFHW001-45.29071_106.40466	Total Phosphorous		0.012	mg/L	5/12/2009	6/1/2009	EPA 365.1	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Nitrite Nitrogen	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Nitrate plus Nitrite as N	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Nitrate as N	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Chloride		6.15	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Fluoride		1.34	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Sulfate		379	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Potassium		11.6	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Cation Milliequivalent		16.9	meq/L	5/12/2009		SM 1050 A	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Anion Milliequivalent		15.5	meq/L	5/12/2009		SM 1050 A	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Calcium		98.2	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Magnesium		81.2	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Sodium		116	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Sodium Adsorption Ratio		2.09	ratio	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Total Hardness as CaCO3		580	Mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Aluminum - Dissolved		0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Cadmium - Dissolved		0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Arsenic - Dissolved	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Copper - Dissolved		0.001	mg/L	5/12/2009	5/18/2009	EPA 200.9	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Iron - Dissolved		0.03	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Lead - Dissolved	<	0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Nickel - Dissolved	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Zinc - Dissolved		0.005	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Aluminum - Total Recoverable		0.03	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Barium-Total Recoverable		0.059	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Beryllium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Cadmium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Chromium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Copper-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Iron-Total Recoverable		0.05	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Lead-Total Recoverable	<	0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Nickel-Total Recoverable	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Selenium-Total Recoverable		0.003	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Zinc-Total Recoverable		0.002	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Uranium - Total Recoverable		0.007	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Manganese		0.006	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Arsenic-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Specific Conductance		1380	mmohs/cm	5/12/2009	5/20/2009	SM 2510-B	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Total Dissolved Solids at 180 deg. C		980	mg/L	5/12/2009	5/18/2009	SM 2540 C	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Total Suspended Solids at 105 deg. C	<	1.00	mg/L	5/12/2009	5/18/2009	SM 2540 D	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Alkalinity in Water		443	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Bicarbonate as CaCO3		433	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	Carbonate		9.83	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.23 CFS 0.12
D0905001-008	EFHW001-45.29071_106.40466	pH		8.35	pH	5/12/2009	5/20/2009	EPA 150.1	PH 8.23 CFS 0.12
D0905001-009	TR005-45-33870-106.52528	Total Phosphorous		0.025	mg/L	5/12/2009	6/1/2009	EPA 365.1	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Nitrite Nitrogen	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Nitrate plus Nitrite as N	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Nitrate as N	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Chloride		6.20	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Fluoride		0.27	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Sulfate		212	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Potassium		4.71	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Cation Milliequivalent		9.07	meq/L	5/12/2009		SM 1050 A	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Anion Milliequivalent		8.28	meq/L	5/12/2009		SM 1050 A	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Calcium		67.1	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Magnesium		43.9	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Sodium		45.8	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Sodium Adsorption Ratio		1.07	ratio	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Total Hardness as CaCO3		348	Mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Aluminum - Dissolved		0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Cadmium - Dissolved	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Arsenic - Dissolved	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Copper - Dissolved		0.002	mg/L	5/12/2009	5/18/2009	EPA 200.9	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Iron - Dissolved		0.02	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Lead - Dissolved	<	0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Nickel - Dissolved	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Zinc - Dissolved		0.006	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Aluminum - Total Recoverable		0.08	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Barium-Total Recoverable		0.060	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Beryllium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Cadmium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Chromium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Copper-Total Recoverable		0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Iron-Total Recoverable		0.13	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Lead-Total Recoverable	<	0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.55 CFS 791

DPHHS ENVIRONMENTAL LABORATORY

Tongue River CBM Sampling Project

Appenidix 5: Analytical Results

Lab#	Sample ID	Test Name	Flag	Result	Units	Collect Date	Analysis Date	Analtical Method	Note
D0905001-009	TR005-45-33870-106.52528	Nickel-Total Recoverable	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Selenium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Zinc-Total Recoverable		0.002	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Uranium - Total Recoverable		0.005	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Manganese		0.030	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Arsenic-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Specific Conductance		762	mmohs/cm	5/12/2009	5/20/2009	SM 2510-B	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Total Dissolved Solids at 180 deg. C		522	mg/L	5/12/2009	5/18/2009	SM 2540 C	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Total Suspended Solids at 105 deg. C		24.0	mg/L	5/12/2009	5/18/2009	SM 2540 D	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Alkalinity in Water		214	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Bicarbonate as CaCO3		202	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	Carbonate		11.5	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.55 CFS 791
D0905001-009	TR005-45-33870-106.52528	pH		8.48	pH	5/12/2009	5/20/2009	EPA 150.1	PH 8.55 CFS 791
D0905001-010	TR004-45.31153_106.52414	Total Phosphorous		0.023	mg/L	5/12/2009	6/1/2009	EPA 365.1	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Nitrite Nitrogen	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Nitrate plus Nitrite as N	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Nitrate as N	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Chloride		6.23	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Fluoride		0.28	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Sulfate		209	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Potassium		4.66	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Cation Milliequivalent		9.05	meq/L	5/12/2009		SM 1050 A	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Anion Milliequivalent		8.22	meq/L	5/12/2009		SM 1050 A	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Calcium		67.0	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Magnesium		44.5	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Sodium		44.3	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Sodium Adsorption Ratio		1.03	ratio	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Total Hardness as CaCO3		350	Mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Aluminum - Dissolved		0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Cadmium - Dissolved	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Arsenic - Dissolved	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Copper - Dissolved		0.002	mg/L	5/12/2009	5/18/2009	EPA 200.9	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Iron - Dissolved		0.02	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Lead - Dissolved	<	0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Nickel - Dissolved	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Zinc - Dissolved		0.004	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Aluminum - Total Recoverable		0.07	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Barium-Total Recoverable		0.060	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Beryllium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Cadmium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Chromium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Copper-Total Recoverable		0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Iron-Total Recoverable		0.12	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Lead-Total Recoverable	<	0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Nickel-Total Recoverable	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Selenium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Zinc-Total Recoverable		0.003	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Uranium - Total Recoverable		0.005	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Manganese		0.028	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Arsenic-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Specific Conductance		749	mmohs/cm	5/12/2009	5/20/2009	SM 2510-B	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Total Dissolved Solids at 180 deg. C		511	mg/L	5/12/2009	5/18/2009	SM 2540 C	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Total Suspended Solids at 105 deg. C		8.20	mg/L	5/12/2009	5/18/2009	SM 2540 D	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Alkalinity in Water		212	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Bicarbonate as CaCO3		199	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	Carbonate		12.9	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.57 CFS 791
D0905001-010	TR004-45.31153_106.52414	pH		8.50	pH	5/12/2009	5/20/2009	EPA 150.1	PH 8.57 CFS 791
D0905001-011	SC002_45.01258_106.86173	Total Phosphorous		0.093	mg/L	5/12/2009	6/1/2009	EPA 365.1	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Nitrite Nitrogen	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Nitrate plus Nitrite as N		0.04	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Nitrate as N		0.04	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Chloride		3.36	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Fluoride	<	0.10	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Sulfate		523	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Potassium		9.74	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Cation Milliequivalent		20.6	meq/L	5/12/2009		SM 1050 A	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Anion Milliequivalent		18.7	meq/L	5/12/2009		SM 1050 A	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Calcium		105	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Magnesium		136	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Sodium		90.5	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Sodium Adsorption Ratio		1.37	ratio	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Total Hardness as CaCO3		822	Mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Aluminum - Dissolved		0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Cadmium - Dissolved	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Arsenic - Dissolved	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.00 CFS 4.2

DPHHS ENVIRONMENTAL LABORATORY

Tongue River CBM Sampling Project

Appenidix 5: Analytical Results

Lab#	Sample ID	Test Name	Flag	Result	Units	Collect Date	Analysis Date	Analtical Method	Note
D0905001-011	SC002_45.01258_106.86173	Copper - Dissolved		0.002	mg/L	5/12/2009	5/18/2009	EPA 200.9	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Iron - Dissolved		0.05	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Lead - Dissolved	<	0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Nickel - Dissolved	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Zinc - Dissolved		0.006	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Aluminum - Total Recoverable		0.59	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Barium-Total Recoverable		0.065	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Beryllium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Cadmium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Chromium-Total Recoverable		0.002	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Copper-Total Recoverable		0.003	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Iron-Total Recoverable		1.45	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Lead-Total Recoverable		0.0013	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Nickel-Total Recoverable	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Selenium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Zinc-Total Recoverable		0.009	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Uranium - Total Recoverable		0.008	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Manganese		0.187	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Arsenic-Total Recoverable		0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Specific Conductance		1520	mmohs/cm	5/12/2009	5/20/2009	SM 2510-B	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Total Dissolved Solids at 180 deg. C		1150	mg/L	5/12/2009	5/18/2009	SM 2540 C	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Total Suspended Solids at 105 deg. C		74.7	mg/L	5/12/2009	5/18/2009	SM 2540 D	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Alkalinity in Water		447	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Bicarbonate as CaCO3		427	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	Carbonate		20.5	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.00 CFS 4.2
D0905001-011	SC002_45.01258_106.86173	pH		8.40	pH	5/12/2009	5/20/2009	EPA 150.1	PH 8.00 CFS 4.2
D0905001-012	TR002-45.03018_106.52414	Total Phosphorous		0.087	mg/L	5/12/2009	6/1/2009	EPA 365.1	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Nitrite Nitrogen	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Nitrate plus Nitrite as N		0.03	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Nitrate as N		0.03	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Chloride		3.55	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Fluoride		0.18	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Sulfate		113	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Potassium		2.36	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Cation Milliequivalent		6.24	meq/L	5/12/2009	6/5/2009	SM 1050 A	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Anion Milliequivalent		5.17	meq/L	5/12/2009	6/5/2009	SM 1050 A	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Calcium		53.3	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Magnesium		29.2	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Sodium		25.6	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Sodium Adsorption Ratio		0.7	ratio	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Total Hardness as CaCO3		253	Mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Aluminum - Dissolved	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Cadmium - Dissolved	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Arsenic - Dissolved	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Copper - Dissolved		0.002	mg/L	5/12/2009	5/18/2009	EPA 200.9	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Iron - Dissolved		0.03	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Lead - Dissolved	<	0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Nickel - Dissolved	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Zinc - Dissolved		0.004	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Aluminum - Total Recoverable		0.56	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Barium-Total Recoverable		0.055	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Beryllium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Cadmium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Chromium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Copper-Total Recoverable		0.002	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Iron-Total Recoverable		1.07	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Lead-Total Recoverable		0.0010	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Nickel-Total Recoverable	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Selenium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Zinc-Total Recoverable		0.007	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Uranium - Total Recoverable		0.003	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Manganese		0.090	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Arsenic-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Specific Conductance		529	mmohs/cm	5/12/2009	5/20/2009	SM 2510-B	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Total Dissolved Solids at 180 deg. C		356	mg/L	5/12/2009	5/18/2009	SM 2540 C	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Total Suspended Solids at 105 deg. C		67.6	mg/L	5/12/2009	5/18/2009	SM 2540 D	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Alkalinity in Water		171	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Bicarbonate as CaCO3		166	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	Carbonate		4.85	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.57 CFS 511
D0905001-012	TR002-45.03018_106.52414	pH		8.40	pH	5/12/2009	5/20/2009	EPA 150.1	PH 8.57 CFS 511
D0905001-013	DC001-45.05537_106.70294	Total Phosphorous		0.024	mg/L	5/12/2009	6/1/2009	EPA 365.1	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Nitrite Nitrogen	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Nitrate plus Nitrite as N		0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Nitrate as N		0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Chloride		32.7	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.11 CFS 0.03

DPHHS ENVIRONMENTAL LABORATORY

Tongue River CBM Sampling Project

Appenidix 5: Analytical Results

Lab#	Sample ID	Test Name	Flag	Result	Units	Collect Date	Analysis Date	Analtical Method	Note
D0905001-013	DC001-45.05537_106.70294	Fluoride	<	0.10	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Sulfate		5360	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Potassium		23.2	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Cation Milliequivalent		113	meq/L	5/12/2009		SM 1050 A	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Anion Milliequivalent		121	meq/L	5/12/2009		SM 1050 A	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Calcium		369	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Magnesium		504	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Sodium		1210	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Sodium Adsorption Ratio		9.59	ratio	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Total Hardness as CaCO3		3000	Mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Aluminum - Dissolved		0.02	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Cadmium - Dissolved	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Arsenic - Dissolved		0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Copper - Dissolved	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.9	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Iron - Dissolved		0.03	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Lead - Dissolved	<	0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Nickel - Dissolved	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Zinc - Dissolved		0.010	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Aluminum - Total Recoverable		0.03	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Barium-Total Recoverable		0.012	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Beryllium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Cadmium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Chromium-Total Recoverable		0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Copper-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Iron-Total Recoverable		0.12	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Lead-Total Recoverable	<	0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Nickel-Total Recoverable	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Selenium-Total Recoverable		0.002	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Zinc-Total Recoverable		0.007	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Uranium - Total Recoverable	H	0.021	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Manganese		0.147	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Arsenic-Total Recoverable		0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Specific Conductance		8630	mmohs/cm	5/12/2009	5/20/2009	SM 2510-B	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Total Dissolved Solids at 180 deg. C		7690	mg/L	5/12/2009	5/18/2009	SM 2540 C	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Total Suspended Solids at 105 deg. C		3.00	mg/L	5/12/2009	5/18/2009	SM 2540 D	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Alkalinity in Water		519	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Bicarbonate as CaCO3		519	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	Carbonate	<	1.00	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.11 CFS 0.03
D0905001-013	DC001-45.05537_106.70294	pH		8.17	pH	5/12/2009	5/20/2009	EPA 150.1	PH 8.11 CFS 0.03
D0905001-014	HW002_45.000109_106.70294	Total Phosphorous		0.074	mg/L	5/12/2009	6/1/2009	EPA 365.1	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Nitrite Nitrogen	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Nitrate plus Nitrite as N		0.03	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Nitrate as N		0.03	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Chloride		30.3	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Fluoride	<	0.10	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Sulfate		6820	mg/L	5/12/2009	5/21/2009	EPA 300.0	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Potassium		18.6	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Cation Milliequivalent		155	meq/L	5/12/2009		SM 1050 A	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Anion Milliequivalent		154	meq/L	5/12/2009		SM 1050 A	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Calcium		344	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Magnesium		637	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Sodium		1960	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Sodium Adsorption Ratio		14.4	ratio	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Total Hardness as CaCO3		3480	Mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Aluminum - Dissolved		0.02	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Cadmium - Dissolved	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Arsenic - Dissolved		0.002	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Copper - Dissolved	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.9	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Iron - Dissolved		0.04	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Lead - Dissolved	<	0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Nickel - Dissolved	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Zinc - Dissolved		0.011	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Aluminum - Total Recoverable		0.03	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Barium-Total Recoverable		0.030	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Beryllium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Cadmium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Chromium-Total Recoverable		0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Copper-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Iron-Total Recoverable		0.24	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Lead-Total Recoverable	<	0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Nickel-Total Recoverable	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Selenium-Total Recoverable		0.003	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Zinc-Total Recoverable		0.009	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Uranium - Total Recoverable	H	0.065	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Manganese		0.170	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Arsenic-Total Recoverable		0.002	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.19 CFS 0.05

DPHHS ENVIRONMENTAL LABORATORY

Tongue River CBM Sampling Project

Appenidix 5: Analytical Results

Lab#	Sample ID	Test Name	Flag	Result	Units	Collect Date	Analysis Date	Analtical Method	Note
D0905001-014	HW002_45.000109_106.70294	Specific Conductance		11300	mmohs/cm	5/12/2009	5/20/2009	SM 2510-B	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Total Dissolved Solids at 180 deg. C		10300	mg/L	5/12/2009	5/18/2009	SM 2540 C	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Total Suspended Solids at 105 deg. C		5.66	mg/L	5/12/2009	5/18/2009	SM 2540 D	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Alkalinity in Water		653	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Bicarbonate as CaCO3		653	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	Carbonate	<	1.00	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.19 CFS 0.05
D0905001-014	HW002_45.000109_106.70294	pH		8.20	pH	5/12/2009	5/20/2009	EPA 150.1	PH 8.19 CFS 0.05
D0905001-015	HW003_45.13398_106.48370	Total Phosphorous		0.083	mg/L	5/12/2009	6/1/2009	EPA 365.1	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Nitrite Nitrogen	<	0.01	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Nitrate plus Nitrite as N		0.04	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Nitrate as N		0.04	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Chloride		16.1	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Fluoride	<	0.10	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Sulfate		2760	mg/L	5/12/2009	5/20/2009	EPA 300.0	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Potassium		19.8	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Cation Milliequivalent		64.6	meq/L	5/12/2009		SM 1050 A	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Anion Milliequivalent		66.0	meq/L	5/12/2009		SM 1050 A	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Calcium		150	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Magnesium		260	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Sodium		810	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Sodium Adsorption Ratio		9.28	ratio	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Total Hardness as CaCO3		1440	Mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Aluminum - Dissolved		0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Cadmium - Dissolved	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Arsenic - Dissolved		0.002	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Copper - Dissolved		0.001	mg/L	5/12/2009	5/18/2009	EPA 200.9	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Iron - Dissolved		0.03	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Lead - Dissolved	<	0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.9	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Nickel - Dissolved	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Zinc - Dissolved		0.008	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Aluminum - Total Recoverable		0.04	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Barium-Total Recoverable		0.019	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Beryllium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Cadmium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Chromium-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Copper-Total Recoverable	<	0.001	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Iron-Total Recoverable		0.18	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Lead-Total Recoverable	<	0.0005	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Nickel-Total Recoverable	<	0.01	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Selenium-Total Recoverable		0.002	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Zinc-Total Recoverable		0.005	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Uranium - Total Recoverable	H	0.022	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Manganese		0.055	mg/L	5/12/2009	5/18/2009	EPA 200.7	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Arsenic-Total Recoverable		0.002	mg/L	5/12/2009	5/19/2009	EPA 200.8	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Specific Conductance		4940	mmohs/cm	5/12/2009	5/20/2009	SM 2510-B	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Total Dissolved Solids at 180 deg. C		4450	mg/L	5/12/2009	5/18/2009	SM 2540 C	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Total Suspended Solids at 105 deg. C		4.40	mg/L	5/12/2009	5/18/2009	SM 2540 D	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Alkalinity in Water		456	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Bicarbonate as CaCO3		420	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	Carbonate		36.2	mg/L	5/12/2009	5/20/2009	SM 2320 B	PH 8.44 CFS 0.83
D0905001-015	HW003_45.13398_106.48370	pH		8.47	pH	5/12/2009	5/20/2009	EPA 150.1	PH 8.44 CFS 0.83
D0905001-016	TR003_45.13836_106.76616	Total Phosphorous		0.024	mg/L	5/13/2009	6/1/2009	EPA 365.1	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Nitrite Nitrogen	<	0.01	mg/L	5/13/2009	5/20/2009	EPA 300.0	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Nitrate plus Nitrite as N	<	0.01	mg/L	5/13/2009	5/20/2009	EPA 300.0	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Nitrate as N	<	0.01	mg/L	5/13/2009	5/20/2009	EPA 300.0	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Chloride		6.23	mg/L	5/13/2009	5/20/2009	EPA 300.0	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Fluoride		0.26	mg/L	5/13/2009	5/20/2009	EPA 300.0	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Sulfate		209	mg/L	5/13/2009	5/20/2009	EPA 300.0	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Potassium		4.73	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Cation Milliequivalent		8.95	meq/L	5/13/2009		SM 1050 A	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Anion Milliequivalent		8.21	meq/L	5/13/2009		SM 1050 A	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Calcium		66.9	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Magnesium		44.2	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Sodium		42.6	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Sodium Adsorption Ratio		1.0	ratio	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Total Hardness as CaCO3		349	Mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Aluminum - Dissolved	<	0.01	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Cadmium - Dissolved	<	0.001	mg/L	5/13/2009	5/19/2009	EPA 200.9	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Arsenic - Dissolved	<	0.001	mg/L	5/13/2009	5/19/2009	EPA 200.9	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Copper - Dissolved		0.002	mg/L	5/13/2009	5/18/2009	EPA 200.9	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Iron - Dissolved		0.03	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Lead - Dissolved	<	0.0005	mg/L	5/13/2009	5/19/2009	EPA 200.9	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Nickel - Dissolved	<	0.01	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Zinc - Dissolved		0.005	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Aluminum - Total Recoverable		0.06	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711

DPHHS ENVIRONMENTAL LABORATORY

Tongue River CBM Sampling Project

Appenidix 5: Analytical Results

Lab#	Sample ID	Test Name	Flag	Result	Units	Collect Date	Analysis Date	Analtical Method	Note
D0905001-016	TR003_45.13836_106.76616	Barium-Total Recoverable		0.056	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Beryllium-Total Recoverable	<	0.001	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Cadmium-Total Recoverable	<	0.001	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Chromium-Total Recoverable	<	0.001	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Copper-Total Recoverable		0.001	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Iron-Total Recoverable		0.06	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Lead-Total Recoverable	<	0.0005	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Nickel-Total Recoverable	<	0.01	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Selenium-Total Recoverable	<	0.001	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Zinc-Total Recoverable		0.002	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Uranium - Total Recoverable		0.005	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Manganese		0.021	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Arsenic-Total Recoverable	<	0.001	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Specific Conductance		767	mmohs/cm	5/13/2009	5/20/2009	SM 2510-B	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Total Dissolved Solids at 180 deg. C		550	mg/L	5/13/2009	5/18/2009	SM 2540 C	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Total Suspended Solids at 105 deg. C		4.40	mg/L	5/13/2009	5/18/2009	SM 2540 D	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Alkalinity in Water		213	mg/L	5/13/2009	5/20/2009	SM 2320 B	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Bicarbonate as CaCO3		202	mg/L	5/13/2009	5/20/2009	SM 2320 B	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	Carbonate		11.3	mg/L	5/13/2009	5/20/2009	SM 2320 B	PH 8.51 CFS 711
D0905001-016	TR003_45.13836_106.76616	pH		8.49	pH	5/13/2009	5/20/2009	EPA 150.1	PH 8.51 CFS 711
D0905001-017	OC002_45.24924_106.16207	Total Phosphorous		0.041	mg/L	5/13/2009	6/1/2009	EPA 365.1	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Nitrite Nitrogen	<	0.01	mg/L	5/13/2009	5/20/2009	EPA 300.0	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Nitrate plus Nitrite as N		0.02	mg/L	5/13/2009	5/20/2009	EPA 300.0	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Nitrate as N		0.02	mg/L	5/13/2009	5/20/2009	EPA 300.0	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Chloride		15.5	mg/L	5/13/2009	5/20/2009	EPA 300.0	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Fluoride	<	0.10	mg/L	5/13/2009	5/20/2009	EPA 300.0	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Sulfate		2040	mg/L	5/13/2009	5/20/2009	EPA 300.0	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Potassium		24.2	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Cation Milliequivalent		51.0	meq/L	5/13/2009		SM 1050 A	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Anion Milliequivalent		50.9	meq/L	5/13/2009		SM 1050 A	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Calcium		183	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Magnesium		239	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Sodium		497	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Sodium Adsorption Ratio		5.69	ratio	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Total Hardness as CaCO3		1440	Mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Aluminum - Dissolved		0.02	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Cadmium - Dissolved	<	0.001	mg/L	5/13/2009	5/19/2009	EPA 200.9	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Arsenic - Dissolved		0.001	mg/L	5/13/2009	5/19/2009	EPA 200.9	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Copper - Dissolved	<	0.001	mg/L	5/13/2009	5/18/2009	EPA 200.9	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Iron - Dissolved		0.01	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Lead - Dissolved	<	0.0005	mg/L	5/13/2009	5/19/2009	EPA 200.9	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Nickel - Dissolved	<	0.01	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Zinc - Dissolved		0.007	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Aluminum - Total Recoverable		0.03	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Barium-Total Recoverable		0.021	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Beryllium-Total Recoverable	<	0.001	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Cadmium-Total Recoverable	<	0.001	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Chromium-Total Recoverable		0.001	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Copper-Total Recoverable	<	0.001	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Iron-Total Recoverable		0.05	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Lead-Total Recoverable	<	0.0005	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Nickel-Total Recoverable	<	0.01	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Selenium-Total Recoverable		0.001	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Zinc-Total Recoverable		0.005	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Uranium - Total Recoverable		0.018	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Manganese		0.025	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Arsenic-Total Recoverable		0.002	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Specific Conductance		3840	mmohs/cm	5/13/2009	5/20/2009	SM 2510-B	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Total Dissolved Solids at 180 deg. C		3510	mg/L	5/13/2009	5/18/2009	SM 2540 C	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Total Suspended Solids at 105 deg. C		2.00	mg/L	5/13/2009	5/18/2009	SM 2540 D	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Alkalinity in Water		481	mg/L	5/13/2009	5/20/2009	SM 2320 B	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Bicarbonate as CaCO3		472	mg/L	5/13/2009	5/20/2009	SM 2320 B	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	Carbonate		8.84	mg/L	5/13/2009	5/20/2009	SM 2320 B	PH 8.34 CFS --
D0905001-017	OC002_45.24924_106.16207	pH		8.34	pH	5/13/2009	5/20/2009	EPA 150.1	PH 8.34 CFS --
D0905001-018	OC003_45.39137_106.14406	Total Phosphorous		0.053	mg/L	5/13/2009	6/1/2009	EPA 365.1	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Nitrite Nitrogen	<	0.01	mg/L	5/13/2009	5/21/2009	EPA 300.0	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Nitrate plus Nitrite as N	<	0.01	mg/L	5/13/2009	5/21/2009	EPA 300.0	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Nitrate as N	<	0.01	mg/L	5/13/2009	5/21/2009	EPA 300.0	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Chloride		18.5	mg/L	5/13/2009	5/21/2009	EPA 300.0	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Fluoride		0.81	mg/L	5/13/2009	5/21/2009	EPA 300.0	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Sulfate		1920	mg/L	5/13/2009	5/21/2009	EPA 300.0	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Potassium		26.3	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Cation Milliequivalent		51.6	meq/L	5/13/2009		SM 1050 A	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Anion Milliequivalent		50.5	meq/L	5/13/2009		SM 1050 A	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Calcium		143	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2

DPHHS ENVIRONMENTAL LABORATORY

Tongue River CBM Sampling Project

Appenidix 5: Analytical Results

Lab#	Sample ID	Test Name	Flag	Result	Units	Collect Date	Analysis Date	Analtical Method	Note
D0905001-018	OC003_45.39137_106.14406	Magnesium		266	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Sodium		503	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Sodium Adsorption Ratio		5.75	ratio	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Total Hardness as CaCO3		1450	Mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Aluminum - Dissolved		0.02	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Cadmium - Dissolved	<	0.001	mg/L	5/13/2009	5/19/2009	EPA 200.9	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Arsenic - Dissolved		0.001	mg/L	5/13/2009	5/19/2009	EPA 200.9	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Copper - Dissolved		0.001	mg/L	5/13/2009	5/18/2009	EPA 200.9	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Iron - Dissolved		0.05	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Lead - Dissolved	<	0.0005	mg/L	5/13/2009	5/19/2009	EPA 200.9	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Nickel - Dissolved	<	0.01	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Zinc - Dissolved		0.007	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Aluminum - Total Recoverable		0.02	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Barium-Total Recoverable		0.018	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Beryllium-Total Recoverable	<	0.001	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Cadmium-Total Recoverable	<	0.001	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Chromium-Total Recoverable	<	0.001	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Copper-Total Recoverable	<	0.001	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Iron-Total Recoverable		0.20	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Lead-Total Recoverable	<	0.0005	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Nickel-Total Recoverable	<	0.01	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Selenium-Total Recoverable		0.001	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Zinc-Total Recoverable		0.005	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Uranium - Total Recoverable		0.014	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Manganese		0.088	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Arsenic-Total Recoverable		0.001	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Specific Conductance		3860	mmohs/cm	5/13/2009	5/20/2009	SM 2510-B	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Total Dissolved Solids at 180 deg. C		3020	mg/L	5/13/2009	5/18/2009	SM 2540 C	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Total Suspended Solids at 105 deg. C		1.80	mg/L	5/13/2009	5/18/2009	SM 2540 D	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Alkalinity in Water		610	mg/L	5/13/2009	5/20/2009	SM 2320 B	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Bicarbonate as CaCO3		610	mg/L	5/13/2009	5/20/2009	SM 2320 B	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	Carbonate	<	1.00	mg/L	5/13/2009	5/20/2009	SM 2320 B	PH 8.23 CFS 2.2
D0905001-018	OC003_45.39137_106.14406	pH		8.27	pH	5/13/2009	5/20/2009	EPA 150.1	PH 8.23 CFS 2.2
D0905001-019	TR006_45.59325_106.28683	Total Phosphorous		0.048	mg/L	5/13/2009	6/1/2009	EPA 365.1	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Nitrite Nitrogen	<	0.01	mg/L	5/13/2009	5/20/2009	EPA 300.0	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Nitrate plus Nitrite as N	<	0.01	mg/L	5/13/2009	5/20/2009	EPA 300.0	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Nitrate as N	<	0.01	mg/L	5/13/2009	5/20/2009	EPA 300.0	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Chloride		6.25	mg/L	5/13/2009	5/20/2009	EPA 300.0	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Fluoride		0.26	mg/L	5/13/2009	5/20/2009	EPA 300.0	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Sulfate		214	mg/L	5/13/2009	5/20/2009	EPA 300.0	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Potassium		4.62	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Cation Milliequivalent		8.82	meq/L	5/13/2009		SM 1050 A	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Anion Milliequivalent		8.41	meq/L	5/13/2009		SM 1050 A	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Calcium		65.5	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Magnesium		42.2	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Sodium		45.1	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Sodium Adsorption Ratio		1.07	ratio	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Total Hardness as CaCO3		337	Mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Aluminum - Dissolved		0.01	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Cadmium - Dissolved	<	0.001	mg/L	5/13/2009	5/19/2009	EPA 200.9	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Arsenic - Dissolved	<	0.001	mg/L	5/13/2009	5/19/2009	EPA 200.9	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Copper - Dissolved		0.002	mg/L	5/13/2009	5/18/2009	EPA 200.9	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Iron - Dissolved		0.02	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Lead - Dissolved	<	0.0005	mg/L	5/13/2009	5/19/2009	EPA 200.9	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Nickel - Dissolved	<	0.01	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Zinc - Dissolved		0.002	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Aluminum - Total Recoverable		0.31	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Barium-Total Recoverable		0.067	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Beryllium-Total Recoverable	<	0.001	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Cadmium-Total Recoverable	<	0.001	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Chromium-Total Recoverable	<	0.001	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Copper-Total Recoverable		0.002	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Iron-Total Recoverable		0.60	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Lead-Total Recoverable		0.0006	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Nickel-Total Recoverable	<	0.01	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Selenium-Total Recoverable	<	0.001	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Zinc-Total Recoverable		0.004	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Uranium - Total Recoverable		0.005	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Manganese		0.061	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Arsenic-Total Recoverable		0.001	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Specific Conductance		774	mmohs/cm	5/13/2009	5/20/2009	SM 2510-B	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Total Dissolved Solids at 180 deg. C		540	mg/L	5/13/2009	5/18/2009	SM 2540 C	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Total Suspended Solids at 105 deg. C		47.6	mg/L	5/13/2009	5/18/2009	SM 2540 D	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Alkalinity in Water		216	mg/L	5/13/2009	5/20/2009	SM 2320 B	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Bicarbonate as CaCO3		203	mg/L	5/13/2009	5/20/2009	SM 2320 B	PH 8.56 CFS 750
D0905001-019	TR006_45.59325_106.28683	Carbonate		13.4	mg/L	5/13/2009	5/20/2009	SM 2320 B	PH 8.56 CFS 750

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Lab#	Sample ID	Test Name	Flag	Result	Units	Collect Date	Analysis Date	Analtical Method	Note
D0905001-019	TR006_45.59325_106.28683	pH		8.51	pH	5/13/2009	5/20/2009	EPA 150.1	PH 8.56 CFS 750
D0905001-020	OC001_45.59923_106.27097	Total Phosphorous		0.052	mg/L	5/13/2009	6/1/2009	EPA 365.1	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Nitrite Nitrogen	<	0.01	mg/L	5/13/2009	5/21/2009	EPA 300.0	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Nitrate plus Nitrite as N	<	0.01	mg/L	5/13/2009	5/21/2009	EPA 300.0	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Nitrate as N	<	0.01	mg/L	5/13/2009	5/21/2009	EPA 300.0	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Chloride		16.6	mg/L	5/13/2009	5/21/2009	EPA 300.0	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Fluoride		0.87	mg/L	5/13/2009	5/21/2009	EPA 300.0	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Sulfate		1600	mg/L	5/13/2009	5/21/2009	EPA 300.0	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Potassium		25.7	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Cation Milliequivalent		46.2	meq/L	5/13/2009		SM 1050 A	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Anion Milliequivalent		44.3	meq/L	5/13/2009		SM 1050 A	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Calcium		111	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Magnesium		218	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Sodium		508	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Sodium Adsorption Ratio		6.45	ratio	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Total Hardness as CaCO3		1180	Mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Aluminum - Dissolved		0.02	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Cadmium - Dissolved	<	0.001	mg/L	5/13/2009	5/19/2009	EPA 200.9	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Arsenic - Dissolved		0.001	mg/L	5/13/2009	5/19/2009	EPA 200.9	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Arsenic-Total Recoverable		0.001	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Copper - Dissolved		0.003	mg/L	5/13/2009	5/18/2009	EPA 200.9	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Iron - Dissolved		0.04	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Lead - Dissolved	<	0.0005	mg/L	5/13/2009	5/19/2009	EPA 200.9	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Nickel - Dissolved	<	0.01	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Zinc - Dissolved		0.008	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Aluminum - Total Recoverable		0.18	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Barium-Total Recoverable		0.036	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Beryllium-Total Recoverable	<	0.001	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Cadmium-Total Recoverable	<	0.001	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Chromium-Total Recoverable		0.001	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Copper-Total Recoverable	<	0.001	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Iron-Total Recoverable		0.41	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Lead-Total Recoverable		0.0005	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Nickel-Total Recoverable	<	0.01	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Selenium-Total Recoverable		0.001	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Zinc-Total Recoverable		0.006	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Uranium - Total Recoverable		0.013	mg/L	5/13/2009	5/19/2009	EPA 200.8	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Manganese		0.085	mg/L	5/13/2009	5/18/2009	EPA 200.7	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Specific Conductance		3530	mmohs/cm	5/13/2009	5/20/2009	SM 2510-B	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Total Dissolved Solids at 180 deg. C		2850	mg/L	5/13/2009	5/18/2009	SM 2540 C	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Total Suspended Solids at 105 deg. C		17.0	mg/L	5/13/2009	5/18/2009	SM 2540 D	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Alkalinity in Water		592	mg/L	5/13/2009	5/20/2009	SM 2320 B	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Bicarbonate as CaCO3		546	mg/L	5/13/2009	5/20/2009	SM 2320 B	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	Carbonate		46.4	mg/L	5/13/2009	5/20/2009	SM 2320 B	PH 8.50 CFS 9.7
D0905001-020	OC001_45.59923_106.27097	pH		8.48	pH	5/13/2009	5/20/2009	EPA 150.1	PH 8.50 CFS 9.7
D0905001-021	PC001_46.24712_105.74789	Total Phosphorous		0.056	mg/L	5/14/2009	6/1/2009	EPA 365.1	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Nitrite Nitrogen	<	0.01	mg/L	5/14/2009	5/21/2009	EPA 300.0	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Nitrate plus Nitrite as N	<	0.01	mg/L	5/14/2009	5/21/2009	EPA 300.0	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Nitrate as N	<	0.01	mg/L	5/14/2009	5/21/2009	EPA 300.0	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Chloride		6.88	mg/L	5/14/2009	5/21/2009	EPA 300.0	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Fluoride	<	0.10	mg/L	5/14/2009	5/21/2009	EPA 300.0	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Sulfate		984	mg/L	5/14/2009	5/21/2009	EPA 300.0	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Potassium		13.6	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Cation Milliequivalent		25.5	meq/L	5/14/2009		SM 1050 A	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Anion Milliequivalent		25.6	meq/L	5/14/2009		SM 1050 A	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Calcium		71.7	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Magnesium		69.8	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Sodium		365	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Sodium Adsorption Ratio		7.36	ratio	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Total Hardness as CaCO3		466	Mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Aluminum - Dissolved		0.01	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Cadmium - Dissolved	<	0.001	mg/L	5/14/2009	5/19/2009	EPA 200.9	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Arsenic - Dissolved		0.001	mg/L	5/14/2009	5/19/2009	EPA 200.9	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Copper - Dissolved		0.005	mg/L	5/14/2009	5/18/2009	EPA 200.9	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Iron - Dissolved		0.14	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Lead - Dissolved	<	0.0005	mg/L	5/14/2009	5/19/2009	EPA 200.9	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Nickel - Dissolved	<	0.01	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Zinc - Dissolved		0.008	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Aluminum - Total Recoverable		0.61	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Barium-Total Recoverable		0.117	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Beryllium-Total Recoverable	<	0.001	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Cadmium-Total Recoverable	<	0.001	mg/L	5/14/2009	5/19/2009	EPA 200.8	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Chromium-Total Recoverable		0.001	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Copper-Total Recoverable		0.006	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Iron-Total Recoverable		0.67	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5

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Lab#	Sample ID	Test Name	Flag	Result	Units	Collect Date	Analysis Date	Analtical Method	Note
D0905001-021	PC001_46.24712_105.74789	Lead-Total Recoverable		0.0011	mg/L	5/14/2009	5/19/2009	EPA 200.8	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Nickel-Total Recoverable	<	0.01	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Selenium-Total Recoverable		0.002	mg/L	5/14/2009	5/19/2009	EPA 200.8	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Zinc-Total Recoverable		0.006	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Uranium - Total Recoverable		0.008	mg/L	5/14/2009	5/19/2009	EPA 200.8	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Manganese		0.072	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Arsenic-Total Recoverable		0.001	mg/L	5/14/2009	5/19/2009	EPA 200.8	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Specific Conductance		2280	mmohs/cm	5/14/2009	5/20/2009	SM 2510-B	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Total Dissolved Solids at 180 deg. C		1710	mg/L	5/14/2009	5/18/2009	SM 2540 C	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Total Suspended Solids at 105 deg. C		41.0	mg/L	5/14/2009	5/18/2009	SM 2540 D	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Alkalinity in Water		279	mg/L	5/14/2009	5/20/2009	SM 2320 B	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Bicarbonate as CaCO3		261	mg/L	5/14/2009	5/20/2009	SM 2320 B	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	Carbonate		18.5	mg/L	5/14/2009	5/20/2009	SM 2320 B	PH 8.75 CFS 8.5
D0905001-021	PC001_46.24712_105.74789	pH		8.52	pH	5/14/2009	5/20/2009	EPA 150.1	PH 8.75 CFS 8.5
D0905001-022	TR009_46.24966_105.75237	Total Phosphorous		0.169	mg/L	5/14/2009	6/1/2009	EPA 365.1	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Nitrite Nitrogen	<	0.01	mg/L	5/14/2009	5/21/2009	EPA 300.0	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Nitrate plus Nitrite as N	<	0.01	mg/L	5/14/2009	5/21/2009	EPA 300.0	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Nitrate as N	<	0.01	mg/L	5/14/2009	5/21/2009	EPA 300.0	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Chloride		5.76	mg/L	5/14/2009	5/21/2009	EPA 300.0	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Fluoride	<	0.10	mg/L	5/14/2009	5/21/2009	EPA 300.0	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Sulfate		231	mg/L	5/14/2009	5/21/2009	EPA 300.0	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Potassium		5.31	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Cation Milliequivalent		9.87	meq/L	5/14/2009		SM 1050 A	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Anion Milliequivalent		8.88	meq/L	5/14/2009		SM 1050 A	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Calcium		69.6	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Magnesium		45.1	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Sodium		58.6	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Sodium Adsorption Ratio		1.34	ratio	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Total Hardness as CaCO3		360	Mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Aluminum - Dissolved		0.13	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Cadmium - Dissolved	<	0.001	mg/L	5/14/2009	5/19/2009	EPA 200.9	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Arsenic - Dissolved	<	0.001	mg/L	5/14/2009	5/19/2009	EPA 200.9	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Copper - Dissolved		0.002	mg/L	5/14/2009	5/18/2009	EPA 200.9	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Iron - Dissolved		0.13	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Lead - Dissolved	<	0.0005	mg/L	5/14/2009	5/19/2009	EPA 200.9	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Nickel - Dissolved	<	0.01	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Zinc - Dissolved		0.004	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Aluminum - Total Recoverable		2.87	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Barium-Total Recoverable		0.110	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Beryllium-Total Recoverable	<	0.001	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Cadmium-Total Recoverable	<	0.001	mg/L	5/14/2009	5/19/2009	EPA 200.8	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Chromium-Total Recoverable		0.004	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Copper-Total Recoverable		0.007	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Iron-Total Recoverable		3.79	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Lead-Total Recoverable		0.0046	mg/L	5/14/2009	5/19/2009	EPA 200.8	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Nickel-Total Recoverable	<	0.01	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Selenium-Total Recoverable	<	0.001	mg/L	5/14/2009	5/19/2009	EPA 200.8	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Zinc-Total Recoverable		0.019	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Uranium - Total Recoverable		0.005	mg/L	5/14/2009	5/19/2009	EPA 200.8	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Manganese		0.118	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Arsenic-Total Recoverable		0.002	mg/L	5/14/2009	5/19/2009	EPA 200.8	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Specific Conductance		839	mmohs/cm	5/14/2009	5/20/2009	SM 2510-B	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Total Dissolved Solids at 180 deg. C		577	mg/L	5/14/2009	5/18/2009	SM 2540 C	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Total Suspended Solids at 105 deg. C		243	mg/L	5/14/2009	5/18/2009	SM 2540 D	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Alkalinity in Water		225	mg/L	5/14/2009	5/20/2009	SM 2320 B	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Bicarbonate as CaCO3		212	mg/L	5/14/2009	5/20/2009	SM 2320 B	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	Carbonate		13.1	mg/L	5/14/2009	5/20/2009	SM 2320 B	PH 8.58 CFS 818
D0905001-022	TR009_46.24966_105.75237	pH		8.50	pH	5/14/2009	5/20/2009	EPA 150.1	PH 8.58 CFS 818
D0905001-023	TR008_46.33754_105.80577	Total Phosphorous		0.139	mg/L	5/14/2009	6/1/2009	EPA 365.1	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Nitrite Nitrogen	<	0.01	mg/L	5/14/2009	5/21/2009	EPA 300.0	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Nitrate plus Nitrite as N	<	0.01	mg/L	5/14/2009	5/21/2009	EPA 300.0	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Nitrate as N	<	0.01	mg/L	5/14/2009	5/21/2009	EPA 300.0	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Chloride		6.62	mg/L	5/14/2009	5/21/2009	EPA 300.0	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Fluoride		0.28	mg/L	5/14/2009	5/21/2009	EPA 300.0	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Sulfate		245	mg/L	5/14/2009	5/21/2009	EPA 300.0	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Potassium		5.30	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Cation Milliequivalent		9.85	meq/L	5/14/2009		SM 1050 A	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Anion Milliequivalent		9.27	meq/L	5/14/2009		SM 1050 A	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Calcium		69.4	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Magnesium		45.2	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Sodium		58.2	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Sodium Adsorption Ratio		1.34	ratio	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Total Hardness as CaCO3		359	Mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Aluminum - Dissolved		0.02	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Cadmium - Dissolved	<	0.001	mg/L	5/14/2009	5/19/2009	EPA 200.9	PH 8.58 CFS 816

DPHHS ENVIRONMENTAL LABORATORY

Tongue River CBM Sampling Project

Appenidix 5: Analytical Results

Lab#	Sample ID	Test Name	Flag	Result	Units	Collect Date	Analysis Date	Analtical Method	Note
D0905001-023	TR008_46.33754_105.80577	Arsenic - Dissolved	<	0.001	mg/L	5/14/2009	5/19/2009	EPA 200.9	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Copper - Dissolved		0.002	mg/L	5/14/2009	5/18/2009	EPA 200.9	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Iron - Dissolved		0.01	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Lead - Dissolved	<	0.0005	mg/L	5/14/2009	5/19/2009	EPA 200.9	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Nickel - Dissolved	<	0.01	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Zinc - Dissolved		0.006	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Aluminum - Total Recoverable		2.08	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Barium-Total Recoverable		0.101	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Beryllium-Total Recoverable	<	0.001	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Cadmium-Total Recoverable	<	0.001	mg/L	5/14/2009	5/19/2009	EPA 200.8	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Chromium-Total Recoverable		0.003	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Copper-Total Recoverable		0.005	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Iron-Total Recoverable		2.96	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Lead-Total Recoverable		0.0031	mg/L	5/14/2009	5/19/2009	EPA 200.8	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Nickel-Total Recoverable	<	0.01	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Selenium-Total Recoverable	<	0.001	mg/L	5/14/2009	5/19/2009	EPA 200.8	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Zinc-Total Recoverable		0.014	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Uranium - Total Recoverable		0.005	mg/L	5/14/2009	5/19/2009	EPA 200.8	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Manganese		0.113	mg/L	5/14/2009	5/18/2009	EPA 200.7	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Arsenic-Total Recoverable		0.002	mg/L	5/14/2009	5/19/2009	EPA 200.8	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Specific Conductance		846	mmohs/cm	5/14/2009	5/20/2009	SM 2510-B	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Total Dissolved Solids at 180 deg. C		837	mg/L	5/14/2009	5/18/2009	SM 2540 C	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Total Suspended Solids at 105 deg. C		323	mg/L	5/14/2009	5/18/2009	SM 2540 D	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Alkalinity in Water		227	mg/L	5/14/2009	5/20/2009	SM 2320 B	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Bicarbonate as CaCO3		212	mg/L	5/14/2009	5/20/2009	SM 2320 B	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	Carbonate		15.3	mg/L	5/14/2009	5/20/2009	SM 2320 B	PH 8.58 CFS 816
D0905001-023	TR008_46.33754_105.80577	pH		8.51	pH	5/14/2009	5/20/2009	EPA 150.1	PH 8.58 CFS 816